**RRS SOFTWARE NOTE 13**
Operations Division
W/OPS12: HE

| | |
|---|---|
| SUBJECT: | **Installation of RRS Workstation (RWS) Software Version (V) 2.3.1** |
| PURPOSE: | The purpose of this note is to upgrade RWS software to V2.3.1 to allow sites to use Sippican LMS-6 radiosondes, in addition to other radiosondes. |
| SITES AFFECTED: | Sites that are using Sippican LMS-6 GPS radiosondes must use RWS Software V2.3.1. Other sites will install RWS Software V2.3.1 as directed by OPS22. |
| AUTHORIZATION: | The authority for this note is Request for Change (RC) 13564 dated December 5, 2012. |
| VERIFICATION STATEMENT: | RRS system tests were performed at the Sterling Field Support Center (SFSC) and NWS Headquarters in Silver Spring by W/OPS24. Operational Test & Evaluation (OT&E) was performed at six RRS sites by region and site personnel. |
| ESTIMATED COMPLETION DATE: | Within 5 days following OPS22 direction to install RWS V2.3.1 |
| TIME REQUIRED: | Approximately 2.0 hours, excluding the special flight |
| ACCOMPLISHED BY: | RWS Site Administrator |
| EQUIPMENT AFFECTED: | RWS |
| SPARES AFFECTED: | Not applicable (N/A) |
| PARTS/MATERIALS REQUIRED: | • Sippican LMS-6 Radiosondes<br>• RWS Software Version (Build) 2.3.1 (one CD)<br>• OMS Software, Version 2.1 (included on the RWS V2.3.1 CD) |
| SOURCE OF PARTS/MATERIALS: | NLSC and OPS22 |
| DISPOSITION OF REMOVED PARTS/MATERIALS: | See RRS V2.3.1 Software Implementation Plan |
| TOOLS AND TEST EQUIPMENT REQUIRED: | None |

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| DOCUMENTS AFFECTED: | RRS Software Note 10: Procedures to install RWS Software V2.1 at RRS sites using Sippican MkIIA Radiosondes<br><br>RRS Software Note 13 (Use to install RWS V2.3.1 when NOT installing the RWS operating system)<br><br>RRS Software Note 15: Installation of Sippican SPS Software V4.8.0<br><br>EHB 9-730: RRS System Administration Manual, Revision A (Procedure to ghost RWS Operating System V1.09, and install RWS Software V2.3.1. Use this manual only when installing the complete RWS operating system)<br><br>LMS-6 SPS Software User Manual for V4.8.0 (Vendor manual to support Sippican SPS Software V4.8.0 installation and for troubleshooting SPS software problems)<br><br>RRS Workstation User Guide for RWS Version 2.2 and 2.3 |
| SUMMARY OF CHANGES | N/A |
| PROCEDURE: | Refer to Attachments A, B, C, and D. |
| TECHNICAL ASSISTANCE: | For questions or problems pertaining to this note, contact SFSC between the hours of 10z to 02z at: Primary (703) 661-1268 or Secondary (703) 661-1293, or e-mail: nws.sfsc@noaa.gov. |
| REPORTING INSTRUCTIONS: | Report the completed modification using the Engineering Management Reporting System (EMRS) instructions in EHB-4, Maintenance Documentation, Part 4, and Appendix H. Include the following information on the EMRS report:<br><br>Maintenance Description (block 5): **RRS Software Note 13**<br><br>Equipment Code (block 7): **RWS**<br><br>Serial Number (block 8): **Unit serial number**<br><br>Maintenance Comments (block 15): **Installation of RWS Software V2.3.1 and OMS V2.1**<br><br>Mod No. (block 17a): **S13**<br><br>A sample EMRS report is provided as Attachment E. |

Deirdre R. Jones
Director, Operations Division

Attachment A – Non-Active Directory Site Installation Procedures, Version 2.3.1
Attachment B – Active Directory Site Installation Procedures, Version 2.3.1
Attachment C – Offline Maintenance Suite Installation Procedures, Version 2.1
Attachment D – Optimizing the Windows Desktop for RRS Workstation
Attachment E – Sample EMRS Report

# Table of Contents

# ATTACHMENT A – Non-Active Directory Site Installation Procedures, Version 2.3.1

This software note does not require ghosting of the operating system. If, for any reason, RRS Workstation (RWS) Operating System Version (V) 1.09 needs to be installed, use NWS EHB 9-730: RRS System Administration Manual, Revision A, for ghosting the operating system. If installing an operating system, continue to use NWS EHB 9-730, Revision A to install RWS Software V2.3.1.

The purpose of this note is to upgrade RWS software (under RWS *Windows XP* operating system) from RWS Software V2.1 or V2.2 to RWS Software V2.3.1 to allow sites to use Sippican LMS-6 radiosondes. RWS Software V2.3.1 is backward compatible with Sippican MKIIA and Vaisala RS92-NGP radiosondes.

Sites that are using, or are going to use Sippican LMS-6 GPS radiosondes, must use RWS Software V2.3.1. Other sites that use Sippican MKIIA or Vaisala RS92-NGP radiosondes may continue to use RWS V2.2, unless otherwise directed to install RWS Software V2.3.1 by OPS22.

Attachment A applies ONLY to NON-ACTIVE DIRECTORY SITES that perform as stand-alone RRS sites.

**NOTE:** **Active Directory Sites:** RRS Active Directory sites (either National or Regional) should use Attachment B of this software note to install RWS Software V2.3.1 as directed by OPS22. RRS continuity sites should also install RWS Software V2.3.1 when directed.

## A.1 Overview

This section provides procedures to replace RWS Software V2.1 or V2.2 by installing RWS Software V2.3.1 and Offline Maintenance Suite (OMS).

**NOTE:** Software notes and manuals for installing RWS software V2.3.1 are available on the OPS24 Web site at:

http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm, and on the OPS1 Web site at: https://www.ops1.nws.noaa.gov.

**NOTE:** The most current RWS Software V2.3.1 is only available on CDs from the Observing Systems Branch (OPS22, 301-713-2093 x107).

### A.1.1 RWS Software Version 2.3.1

RWS Software V2.3.1 has been upgraded to support the new Sippican LMS-6 radiosondes. The current Sippican Signal Processing System (SPS) hardware used with the MKIIA radiosondes will continue to be used with the new LMS-6 radiosonde software.

Table A-1 identifies the relationship of RWS software versions to RRS software notes.

**Table A-1: RWS Software Versions to RRS Software Notes**

| RWS SOFTWARE VERSION | RWS WINDOWS XP OPERATING SYSTEM (1) | DESCRIPTION | RRS SOFTWARE NOTE |
|---|---|---|---|
| V1.2 | V1.07 | RWS software installation at RRS non-commissioned sites using Sippican MKIIA GPS radiosondes (2) | 8 |
| V2.1 | V1.09 | Current RWS software installation at RRS sites using Sippican MKIIA GPS radiosondes (2) | 10 |
| V2.2 | V1.09 | Update of RWS software to accommodate Vaisala RS92-NGP radiosondes and SPS and replace V2.1 at selected RRS sites (3) | 12 |
| V2.3.1 | V1.09 | Update of RWS software to accommodate Sippican LMS-6 radiosondes and SPS and replace V2.1 or V2.2 at selected RRS sites | 13 |
| (1) See NWS EHB 9-730: RRS System Administration Manual, Revision A for *Windows XP* operating system installation instructions. | | | |
| (2) Sites that use Sippican MKIIA GPS radiosondes may continue to use RWS V2.1 unless otherwise directed. However, sites continuing to use RWS Software V2.1 must use RRS Software Note 10 to install or reinstall Software V2.1. | | | |
| (3) Sites that use Vaisala RS92-NGP radiosondes may continue to use RWS V2.2 unless otherwise directed. However, sites continuing to use RWS Software V2.2 must use RRS Software Note 12 to install or reinstall Software V2.2. | | | |

### A.1.2 Terms-of-Reference

The following terms-of-reference apply to local stand-alone RRS sites for this software note:

- **RWS Site Administrator:** A site staff member with complete access to the RWS software, including *Windows* administrative privileges for the RWS
- **(Default) Administrator**: *Windows* built-in Administrator account with temporary administrative privileges for the initial installation of the RWS software only
- **RWS Trainee:** A site member being trained as an Observer who can run simulated flights but is not yet permitted to run RRS live flights
- **RWS Observer:** A site member who is a certified RRS flight Observer or Operator who can conduct live flights, transmit coded messages, and run some offline utilities
- **Stand-Alone Site:** RRS sites that communicate directly to AWIPS/LDAD/OPSnet without going through an Active Directory. Stand-alone sites are also not supported by either a National NWS NOAA Active Directory, or a Regional Active Directory.

### A.1.3 Direct Field Support Staff

Contact the Direct Field Support staff (Helpline) at the Sterling Field Support Center (SFSC) for RWS software installation and maintenance support.

- **Direct Field Support (Helpline) Phone:**

  (703) 661-1268 (Primary)

  (703) 661-1293 (if Primary line is busy)

- **Hours of Operation:**

  UTC 1000 to 0200 (6 AM to 10 PM EDT) (5 AM to 9 PM EST)

  Monday through Friday, excluding Federal holidays

### A.1.4 RRS Software Build Version 2.3.1 Implementation Documentation

Software notes and manuals for installing RWS Software V2.3.1 at RRS operational sites are available on the OPS24 Web site at: http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm, and http://www.ua.nws.noaa.gov/RRS.htm.

- **Software Implementation Plan:** Implementation activities and schedule for installing RRS Software V2.3.1
- **RRS Software Note 13:** Instructions on how to install and use RRS software V2.3.1 when not ghosting an operating system
- **RRS Software Note 15:** Procedure to install SPS Software V4.8.0
- **EHB 9-730: RRS System Administration Manual, Revision A:** Procedure to ghost RWS Operating System V1.09 (with installation of RWS Software V2.2 or V2.3.1).
- **LMS-6 SPS Software User Manual for V4.8.0:** Vendor supporting information on use of Sippican SPS software V4.8.0 in support of RRS Software Note 15 and LMS-6 radiosondes.
- **User Guide for Software:** RRS Workstation User Guide for RWS V2.2 and V2.3
- **Training Videos:** Observer training videos on how to use new RRS software

## A.2 Backup Local Station Data

Local Station Data is erased when the RWS software is installed. Local Station Data and LDAD Data must be restored to support RWS Software V2.3.1.

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|---|---|
| **NOTE:** | As a precaution, sites may also want to back up other data, such as User Account Data and IP addresses to the external hard drive. See NWS EHB 9-730, Section 1.1.2 for precautionary backup procedures. |

### A.2.1 Record the Next Ascension Number

The next flight ascension number must be entered during installation of the RWS software. Determine the next ascension number from the last ascension number on the B-29 form and record the number (i.e. Next ascension number: _____).

### A.2.2 Backup Site-Specific Data

The LDAD Information and the Station Data will be used to install the RWS Software Build V2.3.1. Complete the following sections to print site-specific data.

**NOTE:** Ensure all passwords for the LAN and the dial-up LDAD connections are recorded and stored in a locked safe.

#### A.2.2.1 Backup OMS Station Data

Complete the following steps to print OMS Station Data:

1. Log on to the RWS as an **RWS Administrator**.
2. For all OMS versions, double-click on the **RRS Offline Maintenance** icon to open the RRS *Offline Maintenance Menu*.
3. Click on the **TRS Maintenance** option to open the *OBIT-Offline BITS* window with the *TRS Offline BITs* window displayed.
4. Close the *TRS Offline BITs* window.
5. Select **Setup** and **Station Data** from the top banner menu to open the *Station Data* window (Figure A-1).

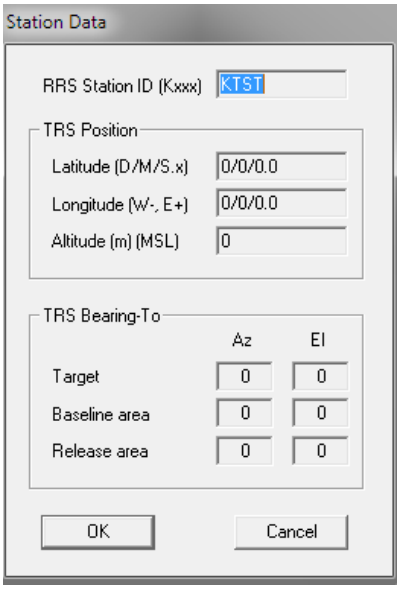


**Figure A-1: OMS Station Data Window (Example)**

6. Press **Alt** + **Print Screen** to print the OMS Station Data.

**NOTE:** If **Alt + Print Screen** does not print the active window, download and install the HP print screen utility, or use **Alt + Print Screen** to copy the screen image to the clipboard, and then use another application (e.g., Paint) to print screen images.

7. Click **Cancel** to close the *Station Data* window.
8. Select **File** and **Exit** from the top banner menu to close the *OBIT-Offline BITS* window.
9. Close the *RRS Offline Maintenance Menu*.

### A.2.2.2 Backup RWS Station Data

Complete the following steps to print the RWS Station Data:

1. Start the **RWS** Software and **Enter Offline Mode**.
2. Select **View**, then **Station Info** from the banner menu to open the *Station Data Display* (Figure A-2).

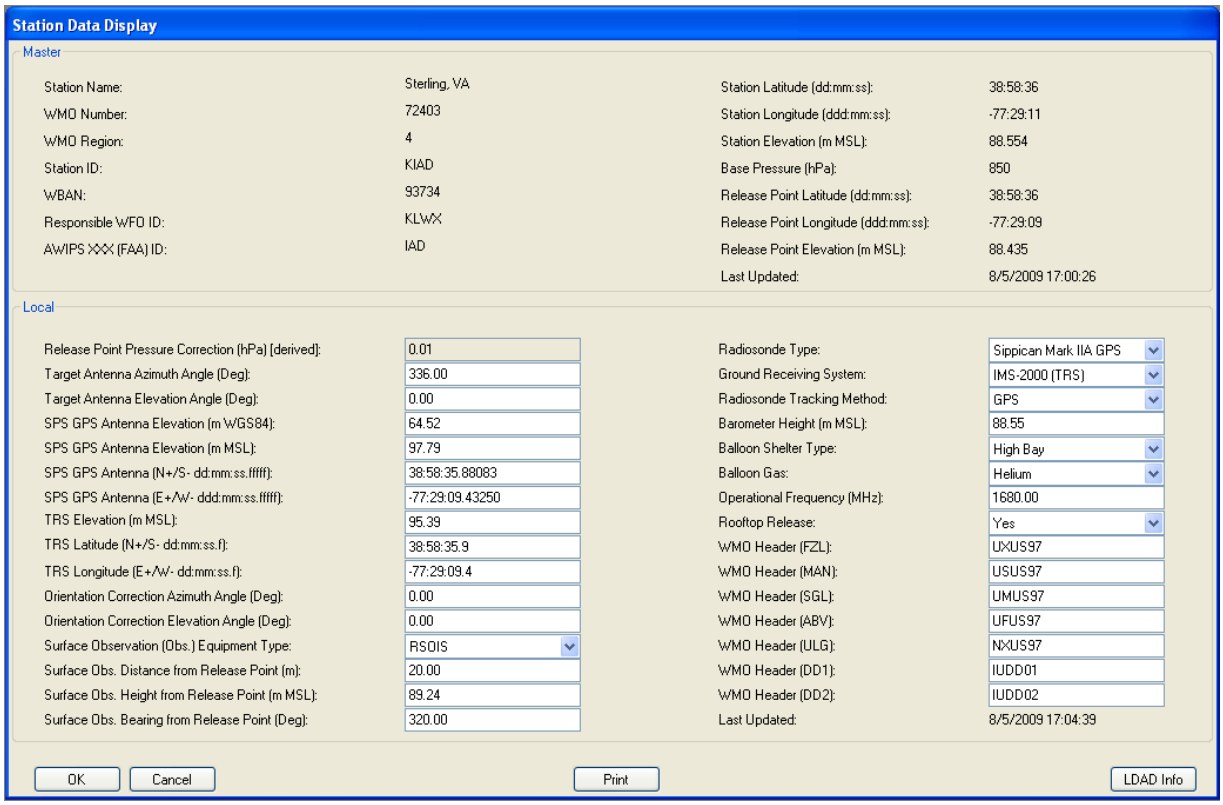


**Figure A-2: RWS Station Data Display (Example)**

3. Press **Alt + Print Screen** or select the **Print** button to print the Station Data.
4. Right-click on the **Station Data Display** window and select the **Save Data in a File** option. The data is automatically saved to `C:\RWS\RWS\DATA FILES\STATION_DATA.TXT`. Also print this screen as a backup record.
5. Click the **LDAD Info** button to open the *LDAD Data Display*. If necessary adjust the column size so the IP addresses are visible.
6. Press **Alt + PrintScreen** to print the LDAD Data.
7. Click **Cancel** in the *LDAD Data Display* to close the window.
8. Click **Cancel** on the *Station Data Display* to close the window.
9. Select **Flight**, and then **Exit** from the banner menu to close the RWS software.

### A.2.3 Save Station Data to External Hard Drive

Use *Windows Explorer* to copy the `C:\RWS\RWS\DATA FILES\STATION_DATA.TXT` file to the `USB E:\drive` (external hard drive). If the USB drive is not available, copy the file to a CD.

### A.2.4 Save LDAD Data to External Hard Drive

Use *Windows Explorer* to copy the folder `C:\LDAD` to the USB `E:\drive` (external hard drive and, if desired, to an alternate source (CD or flash drive). If the USB external drive is not available, copy the folder to a CD. (The `C:\LDAD` folder contains the PuTTY keys.)

### A.2.5 Archive and Backup Flight Data

Prior to installing new RWS software, all active flights must be archived.

1. Double-click the **RWS-NET desktop** icon to start the RWS software. The *NOAA Warning* window will appear.
2. Click **OK**. The main RWS menu will display.
3. Select the **Enter Offline Mode** icon to open the *RWS* window.
4. Select **Tools** and **Utilities** from the banner menu to open the *RWS Software Utilities* window.
5. Go to *Flight Management Utilities* and select **NCDC Archive Utility** displayed on the left of the screen. The *NCDC Archive Utilities* window (Figure A-3) will be updated to display the flight files for archiving.


**Figure A-3: Flight Management Utility**

6. In the *NCDC Archive Utility*, select each row (one at a time) of Flight Data to be archived in a folder in `C:\RWS\RWS\Data Files` (Figure A-4).

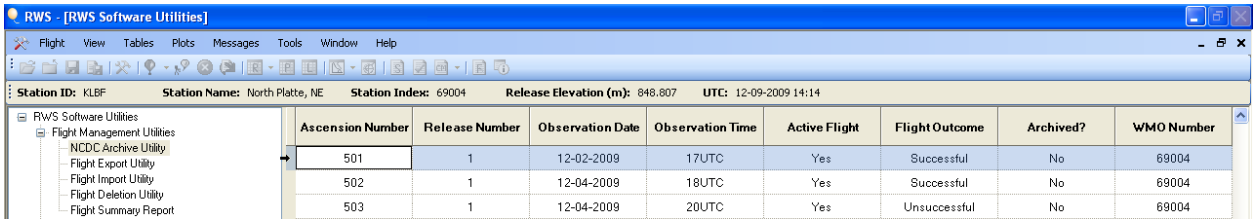


**Figure A-4: NCDC Archive Utility**

7. Click the **Build archives and send to NCDC** button after each flight is archived.
8. Continue to archive flights until all active flights are archived.
9. When finished, select **Flight** and **Close** to close the *RWS Software Utilities* window.
10. Select **Flight** and **Exit** to exit the RWS software. Closing the RWS software automatically backs up all archived flights to RWS external hard drive folder `E:\RWSBackup`.

### A.2.6 Export Archived Flights

Select the last 3 months of archived flights that have not been previously exported or copied to a CD or other external media.

1. Double-click the **RWS-NET** desktop icon to start the RWS software. The *NOAA Warning* window will appear.
2. Click **OK** to dismiss the *NOAA Warning* window. The main *RWS* menu will appear.
3. Select the **Enter Offline Mode** icon to open the *RWS* window.
4. Select **Tools** and **Utilities** from the banner menu to open the *RWS Software Utilities* window.
5. Select **Flight Management Utilities** and **Flight Export Utility** from the *RWS Software Utilities* menu displayed on the left of the screen. The *RWS Software Utilities* window is updated to display a list of flight files (Figure A-5).

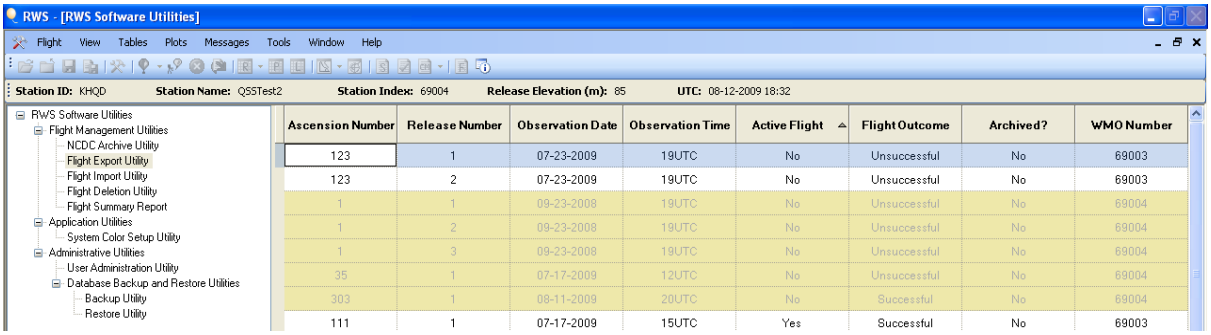


**Figure A-5: Select Ascension Export**

6. Select the last 3 months of archived flights that have not previously been backed up. (To select a range of flights, press the **Shift** key and select the **first and last flights** of the range, or press the **Control** key and scroll the list.)
7. Click **Export** to display the *Browse for Folder* window (Figure A-6).

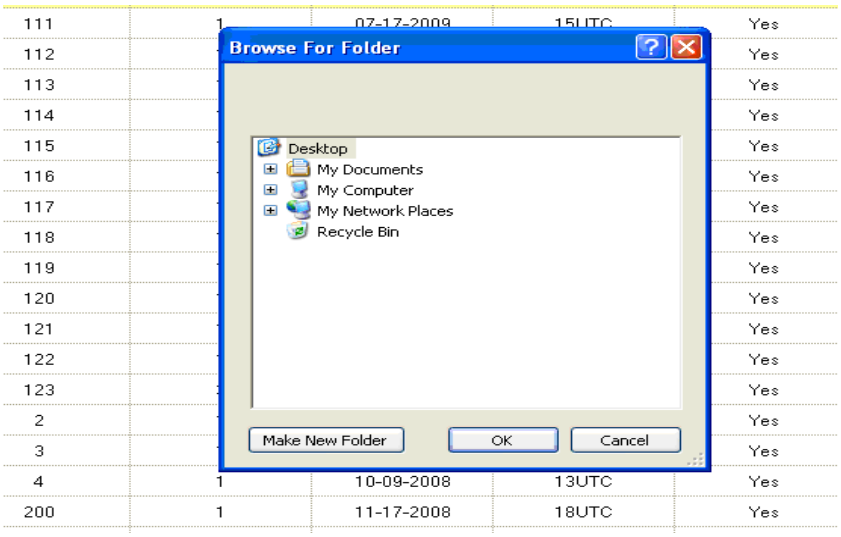


**Figure A-6: Browse to the Location for Export**

8. Browse to and select the desired external media or one or more CDs (do not use the `E:\drive`).

| | |
|---|---|
| **NOTE:** | If using CDs, copy the flight files to one or more CDs and label them RWS Flight CD, Backup #_____, dated: _____. |

9. Click **OK** to export flights. All selected flights will be exported. The *RWS Offline Export Utility Results* window will display when the export is complete (Figure A-7).

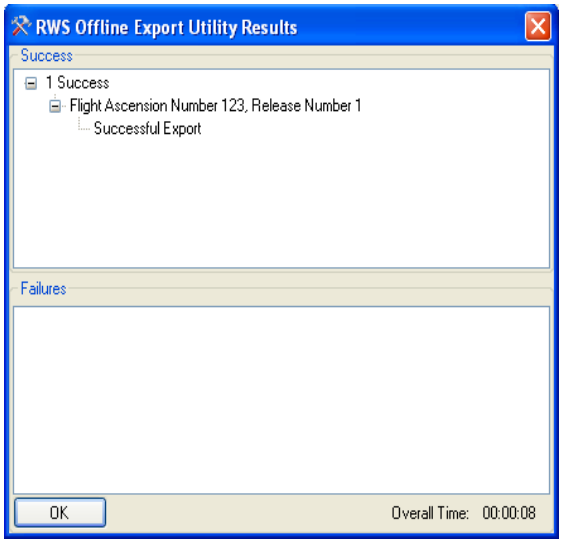


**Figure A-7: RWS Export Utility Results**

10. If any flights fail to export, contact the Direct Field Support staff at (703) 661-1268. The issue should be resolved before proceeding with the installation.
11. Click **OK** to close the *RWS Offline Export Utility Results* window.
12. Select **Flight** and **Close** to close the *RWS Software Utilities* window.
13. Select **Flight** and **Exit** to exit the RWS software.

### A.2.7 Delete Archived Flights from E:\ Drive

To avoid creating duplicate archived flight files for NCDC, all archived flight files in `E:\RWSBackup` must be deleted prior to installing the new RWS software.

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| **NOTE:** | Be careful not to delete database files from `E:\Backup` when deleting flight files. |

1. In *Windows,* select **Computer** and **E Drive (E:)**
2. Select **RWSBackup** folder.
3. Select all archived flights. (To select a range of flights, press the **Shift** key and select the **first and last flights** of the range, or press the **Control** key and scroll the list.)
4. Press the **Delete** key on the keyboard.
5. After all flights are deleted, click on **Close**.

## A.3 RWS Software Version 2.3.1 Initial Installation

RWS Software V2.3.1 is approved for installation only at RRS sites that operate LMS-6 radiosondes and other RRS sites as directed by OPS22.

**CAUTION**

**Always load RWS software as a RWS Site Administrator. Never load RWS software as the default Windows Administrator.**

### A.3.1 Remove RWS Version 2.1 or Version 2.2 Software and OMS Software

**NOTE:** RRS Station and LDAD Data must be backed up prior to removing RWS Software V2.1 or V2.2 to avoid a loss of Site Data

Prior to installing RWS Software V2.3.1, RWS Software V2.1 or V2.2 must be removed.

1. Log on to the RRS Workstation as an **RWS Site Administrator**.
2. Select **Start**, **Control Panel**, and **Add or Remove Programs**.
3. Scroll to **RWS.NET** and click **Remove**. (This may take up to 10 minutes with little or no noticeable activity.)
4. Select **RRS Offline Maintenance** and click **Remove**.
5. A pop-up screen will display: `Are you sure you want to remove RRS Offline Maintenance?` Click **Yes**.
6. A pop-up screen will appear to confirm program removal. Select **Yes**.
7. A pop-up screen will display: `Uninstall Complete.` Click **Finish**.

### A.3.2 Install RWS Software Version 2.3.1

1. If necessary, log on to the RRS Workstation as an **RWS Site Administrator**.
2. Insert the RWS Software CD (`RWS.NET`) into the RWS. The *RWS.NET - InstallShield Wizard* should automatically open (Figure A-8). If, after a few minutes, the program has not launched, browse the CD and double-click on **setup.exe**.

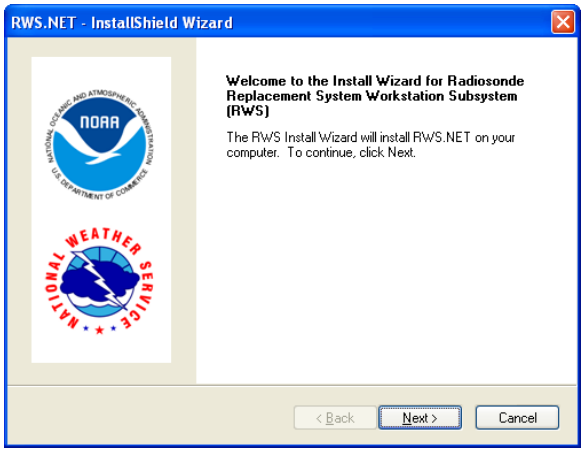


**Figure A-8: RWS.NET - InstallShield Wizard**

3. Click **Next** to display the *Station Information* window (Figure A-9).

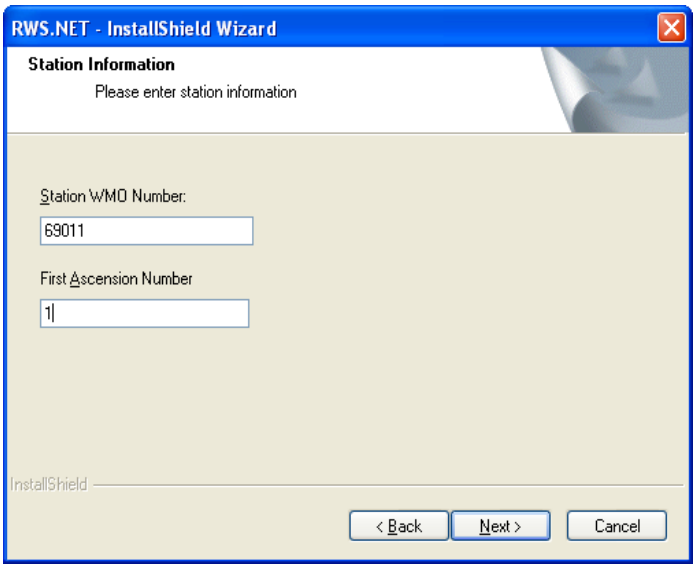


**Figure A-9: Station Information Window**

4. Enter the **Station WMO Number** and **First Ascension Number** recorded in Section A.2.
5. Click **Next** to display the *Ready to Install the Program* window (Figure A-10).

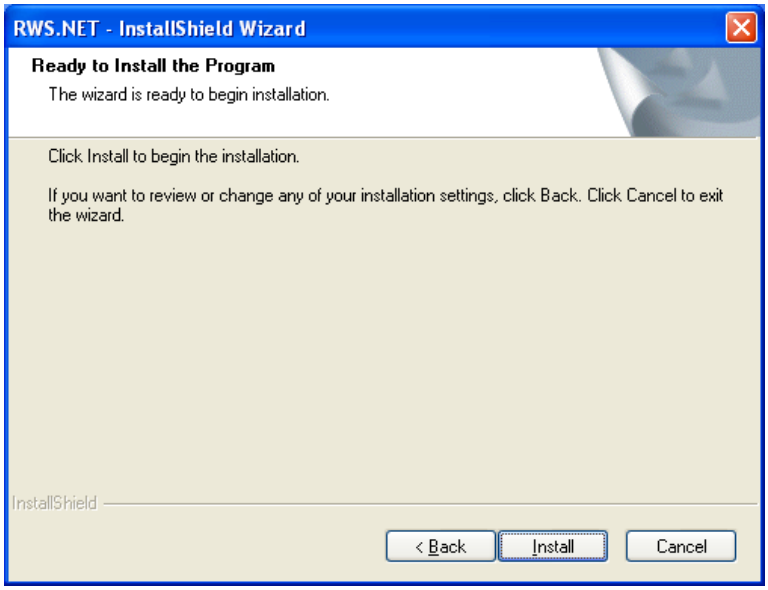


**Figure A-10: Ready to Install the Program Window**

6. Click **Install** and wait until the *InstallShield Wizard Complete* window indicates the process is complete (Figure A-11).

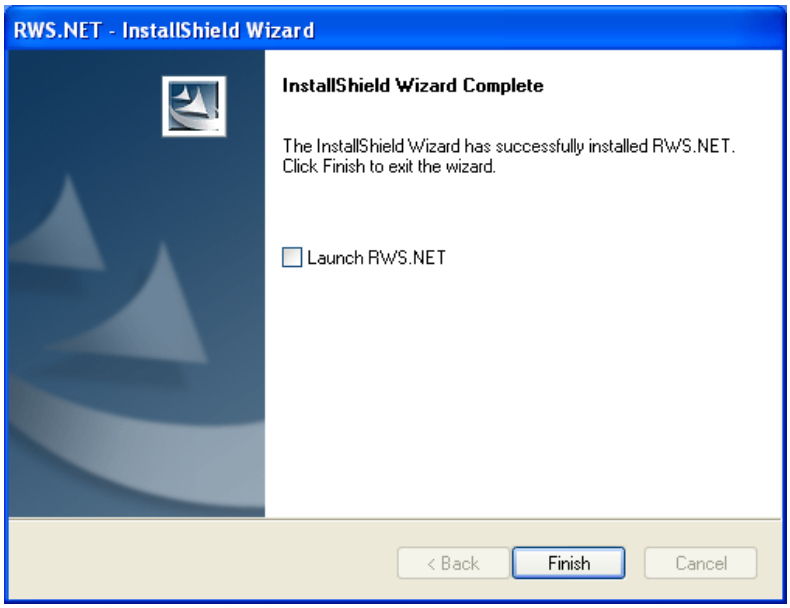


**Figure A-11: InstallShield Wizard Complete**

7. Uncheck **Launch RWS.NET** (Figure A-11), and then click **Finish** to exit the installation.
8. Remove the RWS software CD and restart the RWS.

### A.3.3 Restore C:\LDAD

Review LDAD Data on the `C:\drive` to ensure it contains the PuTTY keys. If the PuTTY file is missing, skip to Section A.3.4. If not correct, copy the `E:\LDAD` folder to its proper location on the RRS Workstation:

1. Copy the contents of the `E:\LDAD` folder to `C:\LDAD`. The `C:\LDAD` folder contains the PuTTY keys required for message transmission.
2. Restart the RWS.

| | |
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| **NOTE:** | Do not recreate PuTTY files. If these files are missing, contact Direct Field Support staff at (703) 661-1268 for replacement. Recreating PuTTY files would require adding the new PuTTY files to all LDADs listed as primary, secondary, and tertiary transmission routes. |

### A.3.4 Enter Station Data

#### A.3.4.1 Verify Master Station Data

The Master Station Data is automatically entered when `RWS.NET` is first launched. Complete the following steps to enter Master Station Data if the Master Station Data needs to be manually loaded due to missing or inaccurate data. Use Section A.3.4.3.

1. Log on to the RRS Workstation as an **RWS Site Administrator**.
2. Double-click on the **RWS.NET** desktop icon to start the RWS software. The *NOAA Warning* window will appear (Figure A-12).

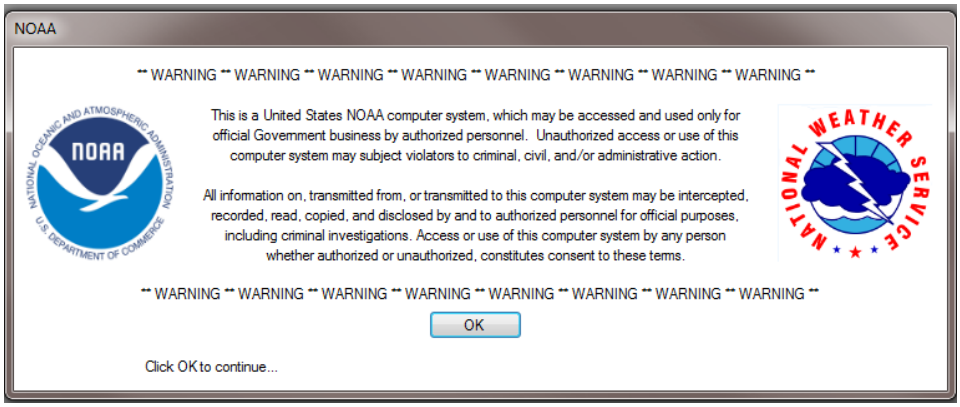



**Figure A-12: NOAA Warning Window**

3. Click **OK** to dismiss the *NOAA Warning* window. RWS will open with the *Master Station Data Initializing 2* window to indicate the Station WMO Number was used to initialize the Master Station Data (Figure A-13).

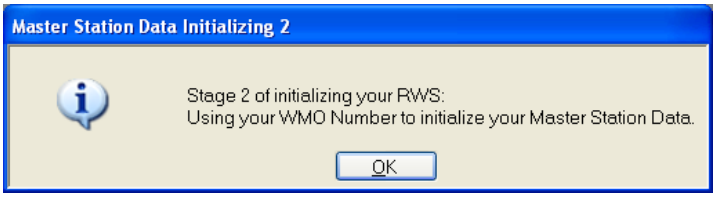



**Figure A-13: Master Station Data Initializing 2 Window**

4. Click **OK** to proceed. If initialization is successful, the *Master Station Data Initialized* window will display indicating `Master Station data updated.` (Figure A-14).


**Figure A-14: Master Station Data Initialized Window**

5. Click **OK** to proceed.

### A.3.4.2 Enter Local Station Data

If the RWS Software indicates the Local Station Data has not been fully initialized, complete the following steps to enter the Local Station Data:

1. If the *Local Station Data Not Initialized 1* window is displayed (Figure A-15), click **Yes** to open the *Station Data Display* (Figure A-16).

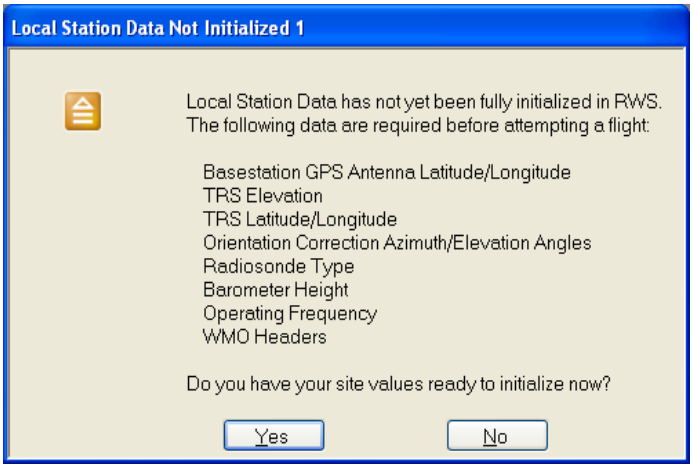



**Figure A-15: Local Station Data Not Initialized 1 Window**

| | |
|---|---|
| **NOTE:** | In addition to the Station Data saved in Section A.2, Station Data was collected during RRS deployment and cataloged in an RRS Site-specific Database on the NWS Headquarters Web site (https://ops13web.nws.noaa.gov/). Compare the locally saved Station (backup) Data to data from the OPS13 Web site. If there are discrepancies, call the Direct Field Support staff at (703) 661-1268. Once discrepancies are resolved, confirmed Station Data will be entered as a part of the RWS Software installation. |
| **NOTE:** | All RRS site Electronic Systems Analysts (ESA) have automatic access to the RRS Site-specific Database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268. |
| **NOTE**: | Ensure the Radiosonde Type selected is **Sippican LMS6 (P sensor)** in the *Station Data Display* window after installing RWS Software V2.3.1. |

2. Enter the following values (recorded in Section A.2.2.2) for any field values missing from the *Station Data Display* (Figure A-16).

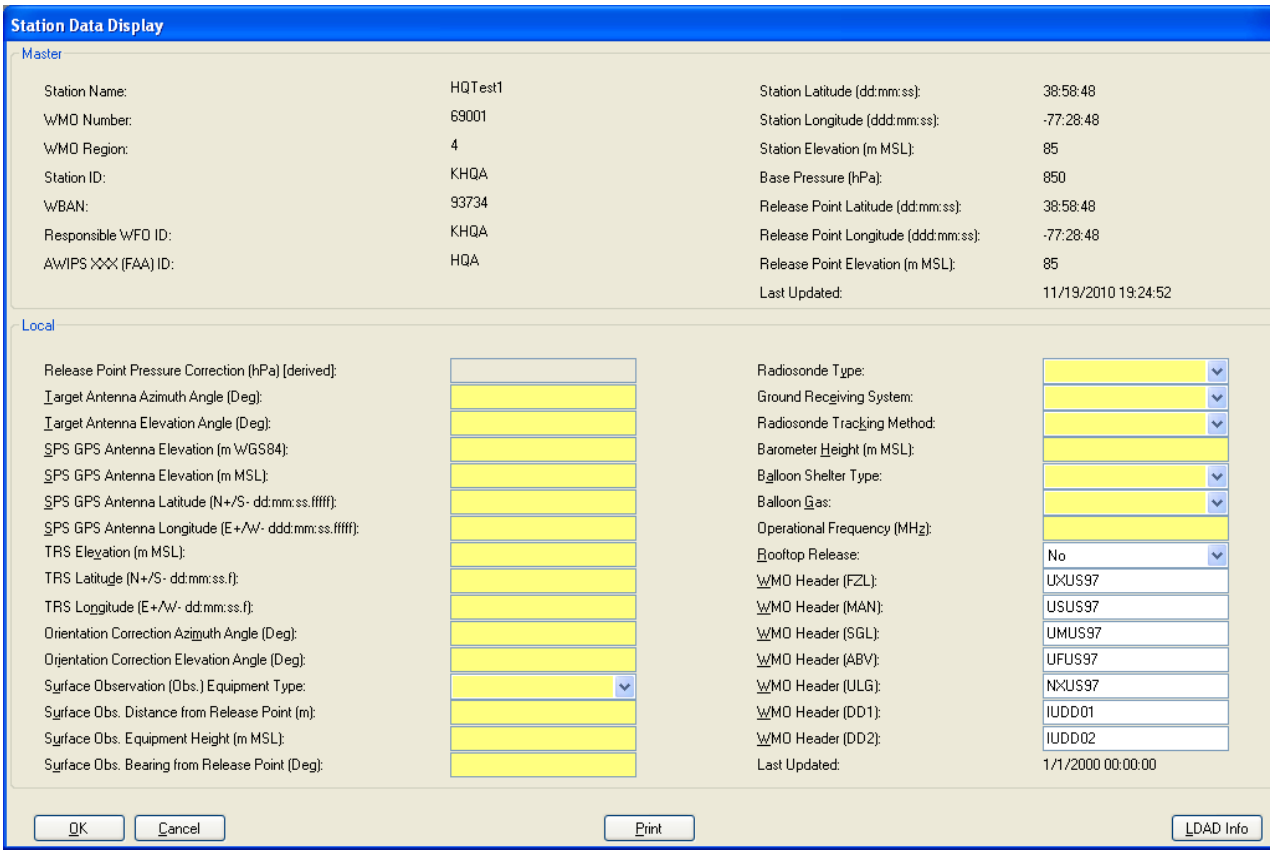



**Figure A-16: Station Data Display (Example Only)**

a. Release Point Pressure Correction (hPa): The Release Point Pressure Correction is derived and is not entered. The Release Point Pressure Correction is the pressure difference between the baseline point and the release point (i.e., balloon shelter). The value is calculated and cannot be entered. The value is negative if the release point is higher than the baseline point.

b. Target Antenna Azimuth Angle (Deg): Enter the Azimuth angle of the target antenna in degrees.

c. Target Antenna Elevation Angle (Deg): Enter the Elevation angle of the target antenna in degrees.

d. SPS GPS Elevation (m WGS84): Enter GPS antenna Elevation in Earth Ellipsoid Sphere in meters.

e. SPS GPS Elevation (m MSL): Enter GPS antenna Elevation above mean sea level in meters.

f. SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff): Enter GPS antenna latitude in the prescribed format.

**NOTE:** South latitudes and west longitudes are preceded by a negative sign.

g. SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff): Enter GPS antenna longitude in the prescribed format.
h. TRS Elevation (m MSL): Enter TRS Elevation above mean sea level in meters.
i. TRS Latitude (N+/S- dd:mm:ss.f): Enter TRS latitude in the prescribed format.
j. TRS Longitude (E+/W- dd:mm:ss.f): Enter TRS longitude in the prescribed format.
k. Orientation Correction Azimuth Angle (Deg): Not implemented, enter **0.00**.
l. Orientation Correction Elevation Angle (Deg): Not implemented, enter **0.00**.
m. Surface Observation (Obs.) Equipment Type: Select appropriate option.
n. Surface Obs. Distance from Release Point (m): Enter appropriate value in meters.
o. Surface Observation Equipment Height (m MSL): Enter appropriate value in meters.
p. Surface Obs. Bearing from Release Point (Deg): Enter appropriate value in degrees.
q. Radiosonde Type: Select appropriate option: Sippican LMS6 (P sensor).
r. Ground Receiving System: Select appropriate option. (This is the SPS type.)
s. Radiosonde Tracking Method: Select **GPS**.
t. Barometer Height (m MSL): Enter station specific value in meters.
u. Balloon Shelter Type: Select appropriate option.
v. Balloon Gas: Select appropriate option.
w. Operational Frequencies (MHz): Enter 1680 or the site-specific frequency in MHz used for first releases.
x. Rooftop Release: Select appropriate option.
y. WMO Header (FZL): Enter station specific value.
z. WMO Header (MAN): Enter station specific value.
aa. WMO Header (SGL): Enter station specific value.
bb. WMO Header (ABV): Enter station specific value.
cc. WMO Header (ULG): Enter station specific value.
dd. WMO Header (DD1): Not implemented, enter **IUDD01**.
ee. WMO Header (DD2): Not implemented, enter **IUDD02**.

3. Print the screen and have a second person verify all data entries.

#### A.3.4.3 Manually enter Master Station Data (top of Station Data Display screen)

| | |
|---|---|
| **NOTE:** | Skip this section and go to Section A.3.4.4 unless the Master Station Data is not pre-loaded or is not accurate (i.e. the AWIPS SID may be XXX). Also use this procedure for RRS equipment siting changes. |

The Master *Data* portion of the Master Station Edit screen (not the same as WMO Station Data) is available on the OPS13 Web site.

1. Open the OPS13 Web site using noaa.gov e-mail username and password (https://ops13web.nws.noaa.gov/rrsupload/file_upload.file_upload_frame).
2. Select the **Site Specific Data** (for site X) from the pull-down list. Click **View Site Data**.
3. Print the Site Specific Data (for Site X) from the Web site.
4. Using the printed Site Specific Data from the OPS13 Web site, verify the Master Station Data.

5. If the OPS13 Web site is unavailable, use the previously saved and printed data from Section A.2.2.2 to verify the Master Station Data.
6. Enter the RRS Site Specific Data into the RWS Master Station Data as follows:

| | |
|---|---|
| **NOTE:** | The Station Data, including data to identify the station, and the station and release position data will appear in text. There are edit fields for the new values. |

7. Close the RWS software.
8. Browse to `C:\RWS\RWS` on the RRS Workstation.
9. Run **MasterEdit.exe**. The following dialog will appear (**Error! Reference source not found.**).
10. Enter the new Master Station Data for the station and release positions. The station values reflect the position of the PDB. The release values reflect the position of where the balloons are released.
11. The Master Station Data Version field is helpful to determine if the RWS has loaded and is using the new values. An incremented version will be pre-filled, and does not need to be changed for the installation.

| | |
|---|---|
| **NOTE:** | Do not change the Station Name, WMO Region, Station ID, WBAN, WFO ID or AWIPS (FAA) ID (this information is pre-loaded). Make changes only if a field is not pre-loaded (displays XXXs) or data is inaccurate. This information is critical for successful data transmission. |

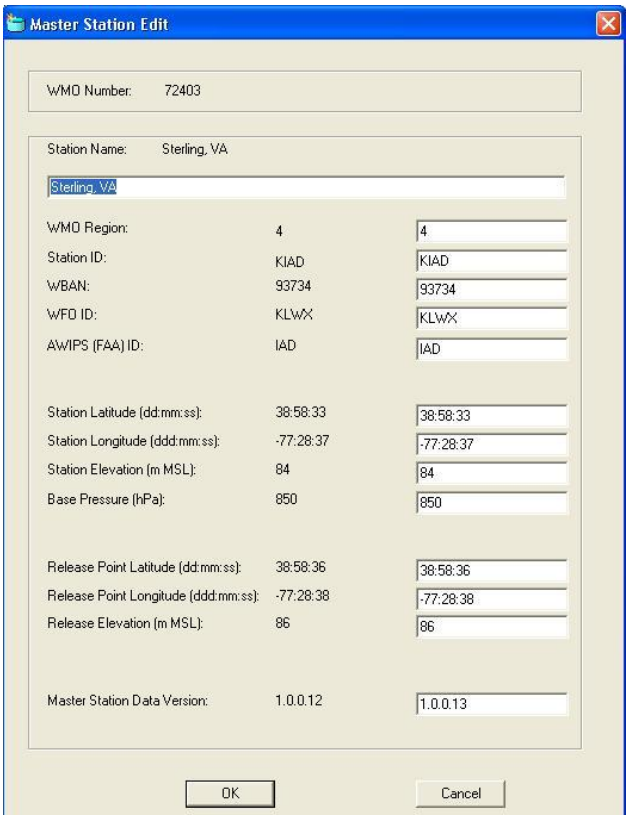



**Figure A-17: Master Station Edit (Example)**

12. When the new data is entered, click **OK**. If successful, the following message will appear (Figure A-18).


**Figure A-18: MasterEdit Update Successful Message**

13. Click **OK** on the *MasterEdit* screen to close.
14. To verify the updated Master Station Data was successful, restart the RWS, go to offline mode, and open the *Station Data Display* menu (from the *View Station Info* menu item).
15. Re-check Master Station Data with Web site data (Figure A-19).

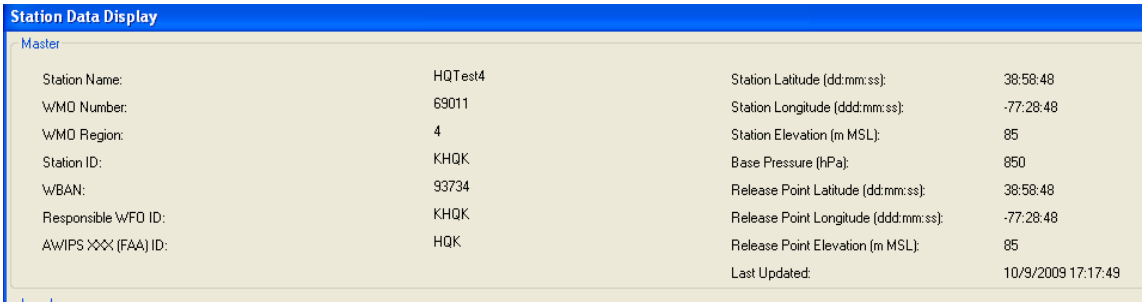



**Figure A-19: Master Station Data Display Menu (Example)**

16. If the RWS Station Data appears to be in error, contact the SFSC Helpline at (703) 661-1268 or (703) 661-1293.

### A.3.4.4 Enter LDAD Data

Complete the following steps to enter LDAD Data.

1. Click **LDAD Info** on the *Station Data Display* to open the LDAD Data Display (Figure A-20).

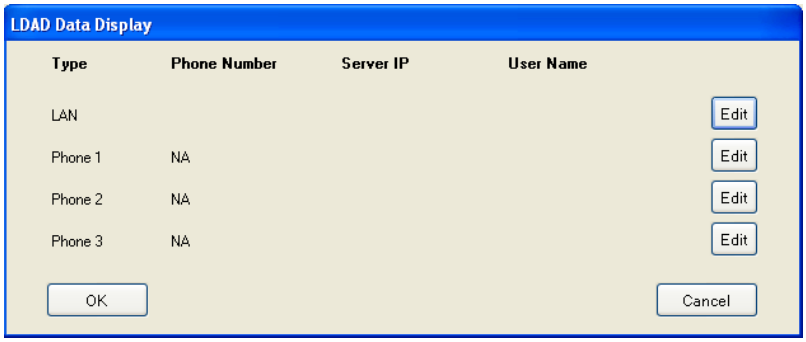



**Figure A-20: LDAD Data Display**

2. Click on the **Edit** button for the LAN Type to open the *LDAD Data for LAN* window (Figure A-21).

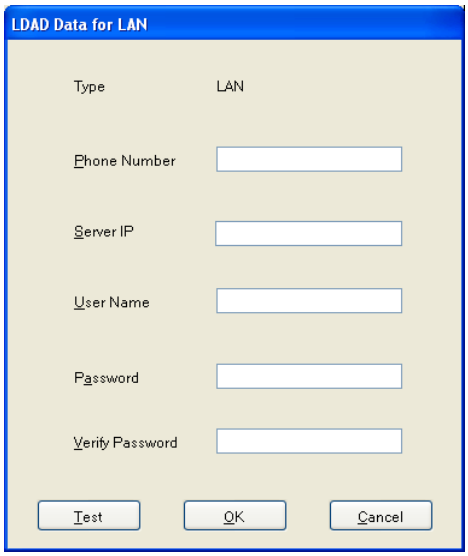



**Figure A-21: LDAD Data for LAN Window**

3. Complete the LDAD Data fields using the data recorded in Section A.2.2.2.

| **NOTE:** | The Phone Number field for the LAN Type should be blank. |
|---|---|

4. Click **OK** to accept the changes and close the *LDAD Data for LAN* window.
5. Edit the Phone 1, Phone 2, and Phone 3 Types.
6. Once all LDAD Data has been entered, click **OK** to close the *LDAD Data Display*.
7. Click **OK** to close the Station Data Display. The message *`Local Station Data Sufficient`* window will display (Figure A-22).
8. Click **OK** to dismiss the *Local Station Data Sufficient* window.

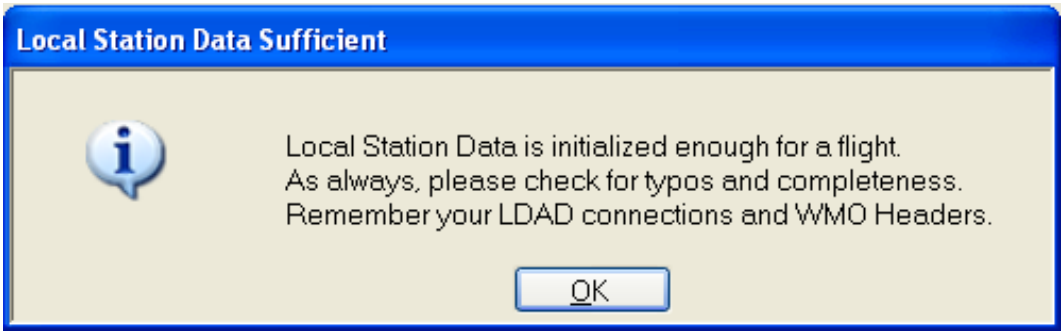



**Figure A-22: Local Station Data Sufficient Window**

### A.3.4.5 Restore Flight Data

In support of a new RWS software installation, flight files have been deleted from the `E:\RWSBackup` folder. If the following window appears (Figure A-23), select **Skip Import** and continue to Section A.3.5.

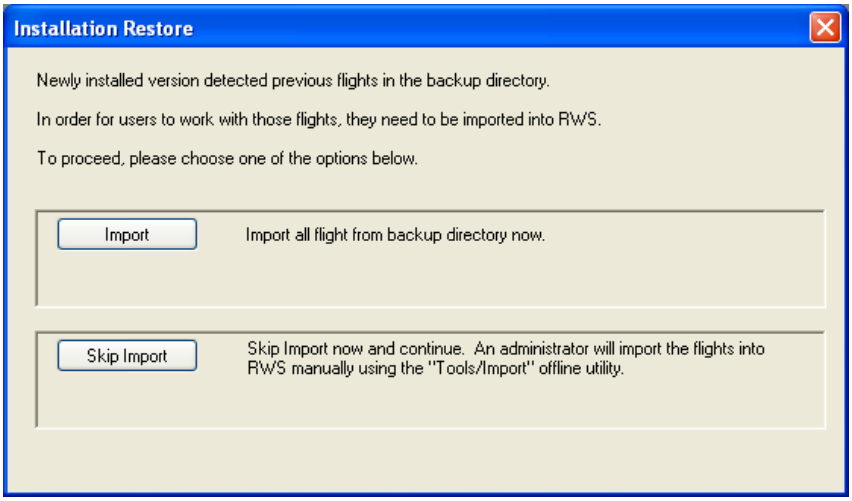



**Figure A-23: Installation Restore Window**

| | |
|---|---|
| **NOTE:** | To avoid creating duplicate archived flight files for NCDC, flight files are not to be imported into RWS. See RRS Workstation User Guide, Section 16 for additional information. |

### A.3.4.6 Optional Pre-Flight "No Data" Message Test

The following test is optional. Skip this Section and go to Section A.4 if the site is going to perform a live test flight. After ghosting and prior to a flight, perform an LDAD/communications test to quickly verify that all passwords are correct, PuTTY keys are not corrupted, all communication lines are working, and Flight Data can be transmitted. If necessary, perform the following procedure:

1. Log onto RRS Workstation as an **RWS Observer**.
2. Start the RWS Software Program.
3. Send a "No Data" message to:
   - The LAN
   - Phone #1
   - Phone #2
   - Phone #3
4. Deselect all other choices except the one being tested.
5. View on an AWIPS terminal to ensure the messages were sent all the way through the system.

| | |
|---|---|
| **NOTE**: | When sending the "No Data" messages, select a different product for each test to differentiate between the messages. |

### A.3.5 Install OMS Software

At this time, install OMS Software V2.1 in accordance with Attachment C, before conducting an upper air flight.

## A.4 Verify Software Installation

### A.4.1 Conduct an Upper Air Sounding and Verify Message Transfer

Conduct a live flight following the initial installation of the RWS Software V2.3.1. See the RRS Workstation User Guide for RWS Observers, for conducting an upper air sounding (for a copy, go to: http://www.ua.nws.noaa.gov/RRS.htm, or use the RWS Help file function).

| | |
|---|---|
| **NOTE:** | Conducting a live flight is not necessary when only an RWS software maintenance release is being installed. |

### A.4.2 Capture the Flight

1. Double-click the **Capture Utility** shortcut to open the *RWS Capture Utility* window.
2. Select the flight from the **RWS Capture Utility** pull-down menu (Figure A-24).

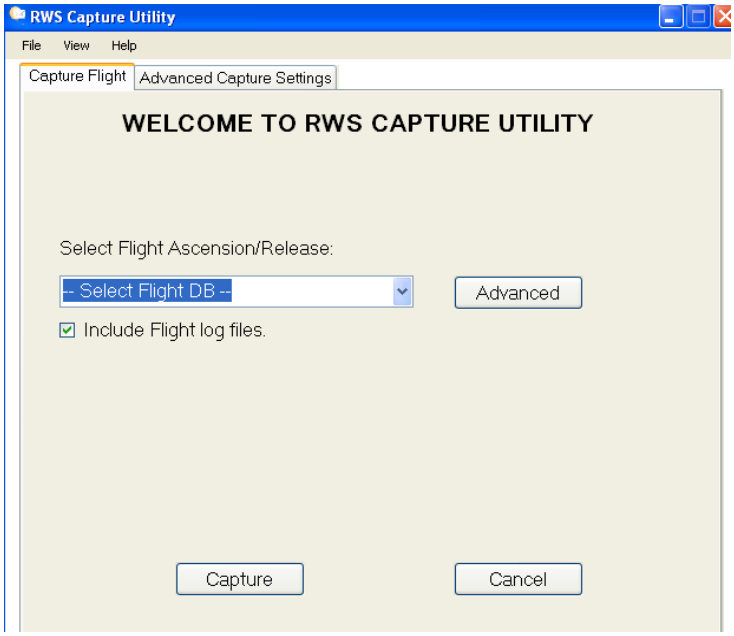



**Figure A-24: RWS Capture Utility**

3. Click the **Capture** button.
4. Click **OK** when the `Capture Successful` message appears.

### A.4.3 Verify Message Transfer

#### A.4.3.1 Verify Message Accuracy in AWIPS

Verify the receipt of the coded messages by logging on to an AWIPS terminal or by viewing the coded messages at http://www.weather.gov/data/.

**NOTE:** To verify receipt of Pacific Region coded messages, log on to: http://www.prh.noaa.gov/data/.

#### A.4.3.2 Verify Messages to NCDC

Verify the successful reception of archived data to the NCDC ftp site. Visit: http://www1.ncdc.noaa.gov/pub/data/ua/RRS/YYYY (where YYYY is the current year). Once at the Web site, find the log file representing the site by identifying the Station ID and the year and month the data was transmitted. For example, `klwx_0801_log.txt` would contain the upload history for LWX for January of 2008.

### A.5 Optimize Windows Desktop

When time permits, optimize the *Windows* Desktop to adjust for best performance. Refer to Attachment D to perform this function.

# ATTACHMENT B – Active Directory Installation Procedures, Version 2.3.1

Attachment B of this software note applies ONLY to ACTIVE DIRECTORY SITES that are Radiosonde Replacement System (RRS) sites supported by either a National or a Regional Directory. A National Active Directory has not been implemented for RRS Workstation (RWS) Software Version (V) 2.3.1.

This software note does not require the ghosting of the operating system. If, for any reason, RWS Operating System V1.09 needs to be ghosted (installed), use NWS EHB 9-730: RRS System Administration Manual, Revision A for ghosting the operating system. If installing an operating system, also continue to use EHB 9-730, Revision A to install RWS Software V2.3.1.

The purpose of this note is to upgrade RWS software (under RWS *Windows XP* Operating System) from RWS Software V2.1 or V2.2 to RWS Software V2.3.1 to allow sites to use Sippican LMS-6 radiosondes. Software V2.3.1 is backward compatible with Sippican MKIIA and Vaisala RS92-NGP radiosondes.

Sites that are using or are going to use Sippican LMS-6 global positioning system (GPS) radiosondes, must use RWS Software V2.3.1. Other sites that use Sippican MKIIA or Vaisala RS92-NGP radiosondes may continue to use RWS Software V2.2, unless otherwise directed to install RWS Software V2.3.1 by OPS22.

**NOTE:** **Non-Active Directory:** RRS stand-alone non-active directory sites should use ATTACHMENT A of this software note to install RWS Software V2.3.1, as directed by OPS22.

## B.1 Overview

This section provides procedures to update RWS Software V2.1 or V2.2 by installing RWS Software V2.3.1.

**NOTE:** Software notes and manuals for installing RWS Software V2.3.1 are available on the OPS24 Web site at: http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm, and on the OPS1 Web site at https://www.ops1.nws.noaa.gov.

**NOTE:** The most current RWS Software V2.3.1 is available on CDs only from the Observing Systems Branch (OPS22, 301-713-2093 x107).

### B.1.1 RWS Software Version 2.3.1

RWS Software V2.3.1 has been upgraded to support the new Sippican LMS-6 radiosondes. The current Sippican SPS hardware used with the MKIIA radiosondes continues to be used with the new LMS-6 radiosonde software.

Table B-1 identifies the relationship of RWS software versions to RRS software notes.

**Table B-1: RWS Software Versions to RRS Software Notes**

| RWS SOFTWARE VERSION | RWS WINDOWS XP OPERATING SYSTEM (1) | DESCRIPTION | RRS SOFTWARE NOTE |
|---|---|---|---|
| V1.2 | V1.07 | RWS software installation at RRS non-commissioned sites using Sippican MKIIA GPS radiosondes (2) | 8 |
| V2.1 | V1.09 | Current RWS software installation at RRS sites using Sippican MKIIA GPS radiosondes (2) | 10 |
| V2.2 | V1.09 | Update of RWS software to accommodate Vaisala RS92-NGP radiosondes and SPS and replace V2.1 at selected RRS sites (3) | 12 |
| V2.3.1 | V1.09 | Update of RWS software to accommodate Sippican LMS-6 radiosondes and SPS and replace V2.1 or V2.2 at selected RRS sites | 13 |
| (1) See NWS EHB 9-730: RRS System Administration Manual, Revision A for *Windows XP* operating system installation instructions. | | | |
| (2) Sites that use Sippican MKIIA GPS radiosondes may continue to use RWS V2.1 unless otherwise directed. However, sites continuing to use RWS Software V2.1 must use RRS Software Note 10 to install or reinstall Software V2.1. | | | |
| (3) Sites that use Vaisala RS92-NGP radiosondes may continue to use RWS V2.2 unless otherwise directed. However, sites continuing to use RWS Software V2.2 must use RRS Software Note 12 to install or reinstall Software V2.2. | | | |

### B.1.2 Terms-of-Reference

The following terms-of-reference apply to this software note:

**NATIONAL**

- **NWS Domain Administrator:** An NWS staff member with NOAA National Active Directory administrative privileges for the nws.noaa/RRS domain (not currently implemented)
- **RRS Organizational Unit (OU) Administrator:** An NWS staff member with NOAA National Active Directory administrative privileges for the RRS OU (not currently implemented)

**REGIONAL**

- **RRS Organizational Unit Administrator:** A Regional staff member with Regional NWS Active Directory administrative privileges for the Region RRS OU

**LOCAL**

- **RWS Site Administrator:** A site staff member with complete access to the RWS software, including *Windows* administrative privileges for the RWS
- **(Default) Administrator:** *Windows* built-in administrative account with temporary administrative privileges only for the initial installation of the RWS software

- **RWS Trainee:** A site member being trained as an Observer who can run simulated flights, but not yet permitted to run RRS live flights
- **RWS Observer:** A site member who is a certified RRS flight Observer or Operator who can conduct live flights, transmit coded messages, and run some offline utilities
- **Stand-Alone Site:** RRS sites that communicate directly to AWIPS/LDAD/OPSnet without going through an Active Directory. Stand-alone sites are also not supported by either a National NWS NOAA Active Directory, or a Regional Active Directory.

| | |
|---|---|
| **NOTE:** | These Active Directory Site Installation Procedures reflect the National NWS NOAA domain naming convention. Regions may require special domain naming conventions. If required, see Regional instructions for implementing a Regional Active Directory domain. |

### B.1.3 Direct Field Support Staff

Contact the Direct Field Support staff (Helpline) at the Sterling Field Support Center (SFSC) for RWS software installation and maintenance support.

- **Direct Field Support (Helpline) Phone:**

  (703) 661-1268 (Primary)

  (703) 661-1293 (if Primary line is busy)

- **Hours of Operation:**

  UTC 1000 to 0200 (6 AM to 10 PM EDT) (5 AM to 9 PM EST)

  Monday through Friday, excluding Federal holidays

### B.1.4 RRS Software Build Version 2.3.1 Implementation Documentation

Software notes and manuals for installing RWS Software V2.3.1 are available on the OPS24 Web site at: http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm, and http://www.ua.nws.noaa.gov/RRS.htm.

**Software Implementation Plan:** Implementation activities and schedule for installing RRS Software V2.3.1

- **RRS Software Note 13:** Instructions on how to install and use RRS Software V2.3.1 when not ghosting an operating system
- **RRS Software Note 15:** Procedures to install SPS Software V4.8.0
- **EHB 9-730: RRS System Administration Manual, Revision A:** Procedure to ghost RWS Operating System V1.09 (with installation of RWS Software V2.3.1)
- **LMS-6 SPS Software User Manual for V4.8.0:** Vendor supporting information on use of Sippican SPS software V4.8.0 in support of RRS Software Note 15 and LMS-6 radiosondes
- **User Guide for Software:** RRS Workstation User Guide for RWS V2.2 and V2.3.1
- **Training Videos:** Observer training videos on how to use new RRS software

### B.2 Backup Local Station Data

Local Station Data is erased when the RWS software is installed. Local Station Data and LDAD Data must be restored to support RWS Software V2.3.1.

**NOTE:** As a precaution, sites may also want to back up other data such as User Account Data and IP addresses to the external hard drive. See NWS EHB 9-730, Section 1.1.2 for precautionary backup procedures.

#### B.2.1 Record the Next Ascension Number

The next ascension number must be entered during installation of the RWS software. Determine the next ascension number from the last ascension number on the B-29 form and record the number (i.e. Next ascension number: _____).

#### B.2.2 Backup Site-Specific Data

Backup LDAD information and Station Data will be used to install the Build V2.3.1 software. Complete the following sections to print Site-specific Data.

**NOTE:** Ensure all passwords for the LAN and the dial-up LDAD connections are recorded and stored in a locked safe.

##### B.2.2.1 Backup OMS Station Data

Complete the following steps to print OMS Station Data:

1. Log on to the RRS Workstation as an **RWS Site Administrator**.
2. For all OMS Versions, double-click on the **RRS Offline Maintenance** icon to open the *Offline Maintenance Menu*.
3. Click on the **TRS Maintenance** option to open the *OBIT-Offline BITS* window with the *TRS Offline BITs* window displayed.
4. Close the *TRS Offline BITs* window.

5. Select **Setup** and **Station Data** from the top banner menu to open the *Station Data* window (Figure B-1).

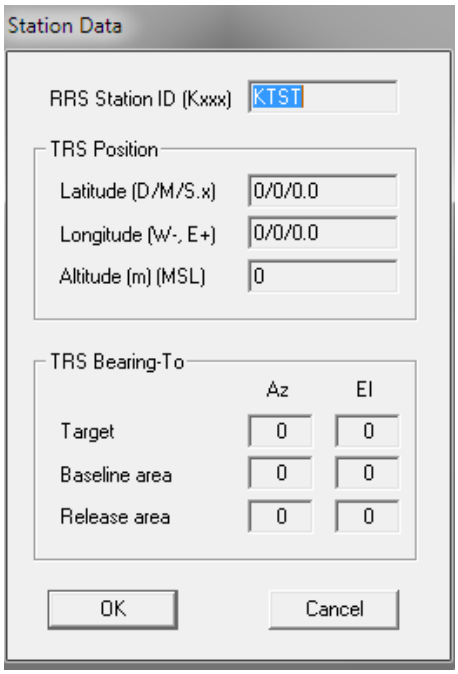



**Figure B-1: OMS Station Data Window**

6. Press **Alt** + **Print Screen** to print the OMS Station Data.

| | |
|---|---|
| **NOTE:** | If **Alt + Print Screen** does not print the active window, download and install the **hp print screen utility**, or use the **Alt + Print Screen** to copy the screen image to the clipboard, and then use another application (e.g., Paint) to print screen images. |

7. Click **Cancel** to close the *Station Data* window.
8. Select **File** and **Exit** from the top banner menu to close the *OBIT-Offline BITS* window.
9. Close the *RRS Offline Maintenance Menu*.

### B.2.2.2 Backup RWS Station Data

Complete the following steps to print the RWS Station Data.

1. Start the RWS Software and enter **Offline Mode**.
2. Select **View** and **Station Info** from the banner menu to open the *Station Data Display* window (Figure B-2).

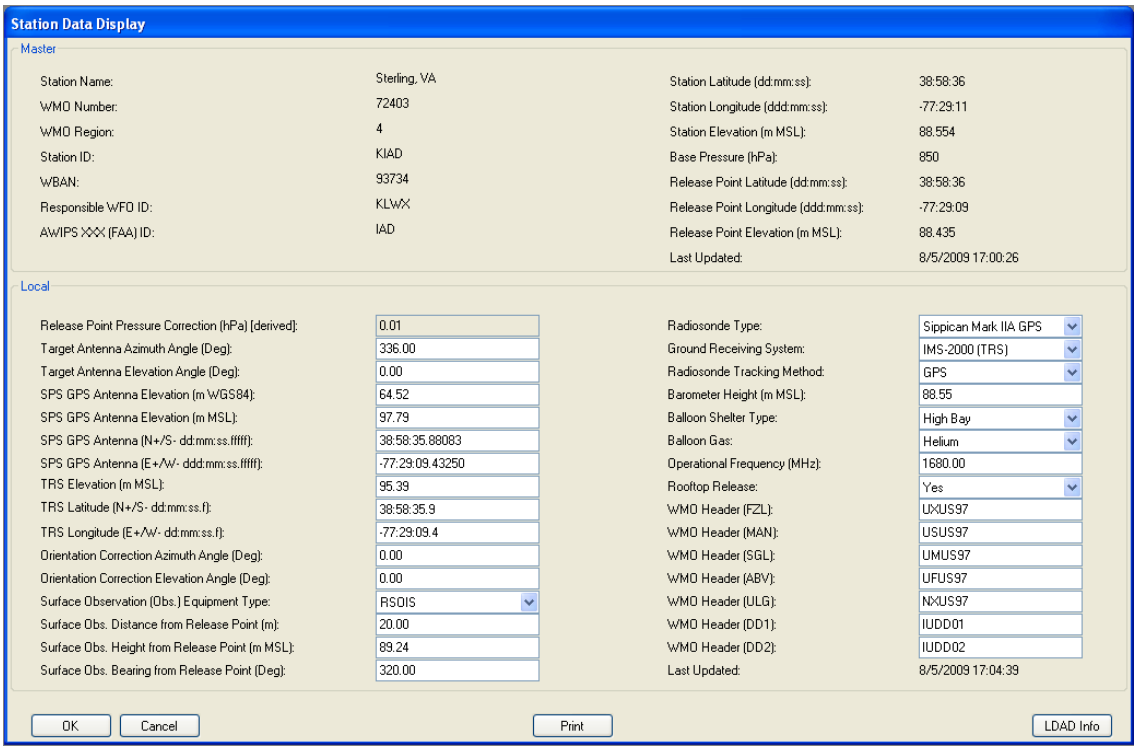



**Figure B-2: RWS Station Data Display**

3. Press **Alt** + **Print Screen** or select the **Print** button to print the Station Data.
4. Right-click on the *Station Data Display* window and select the **Save Data in a File** option. The data is automatically saved to `C:\RWS\RWS\DATA FILES\STATION_DATA.TXT`. Also print this screen as a backup record.
5. Click the **LDAD Info** button to open the *LDAD Data Display*. If necessary, adjust the column size so the IP addresses are visible.
6. Press **Alt** + **PrintScreen** to print the LDAD Data.
7. Click **Cancel** in the *LDAD Data Display* to close the window.
8. Click **Cancel** on the *Station Data Display* to close the window.
9. Select **Flight** and **Exit** from the banner menu to close the RWS Software.

### B.2.3 Save Station Data to External Hard Drive

Use *Windows Explorer* to copy the `C:\RWS\RWS\DATA FILES\STATION_DATA.TXT` file to the USB `E:\drive` (external hard drive). If the USB drive is not available, copy the file to a CD.

### B.2.4 Save LDAD Data to External Hard Drive

Use *Windows Explorer* to copy the folder `C:\LDAD` to the USB `E:\drive` (external hard drive and, if desired, to an alternate source (CD or flash drive). If the USB drive is not available, copy the folder to a CD. (The `C:\LDAD` folder contains the PuTTY keys.)

### B.2.5 Archive and Backup Flights

Prior to installing new RWS software, all active flights must be archived.

1. Double-click the **RWS-NET** desktop icon to start the RWS software. The *NOAA Warning* window will appear.
2. Click **OK**. The main *RWS* menu will display.
3. Select the **Enter Offline Mode** icon to open the *RWS* window.
4. Select **Tools** and **Utilities** from the banner menu to open the *RWS Software Utilities* window.
5. Go to *Flight Management Utilities* and select **NCDC Archive Utility** displayed on the left of the screen. The *NCDC Archive Utilities* window (Figure B-3) will be updated to display the flight files for archiving.


**Figure B-3: Flight Management Utility**

6. In the *NCDC Archive Utility*, select each row (one at a time) of Flight Data to be archived in a folder in `C:\RWS\RWS\Data Files` (Figure B-4).

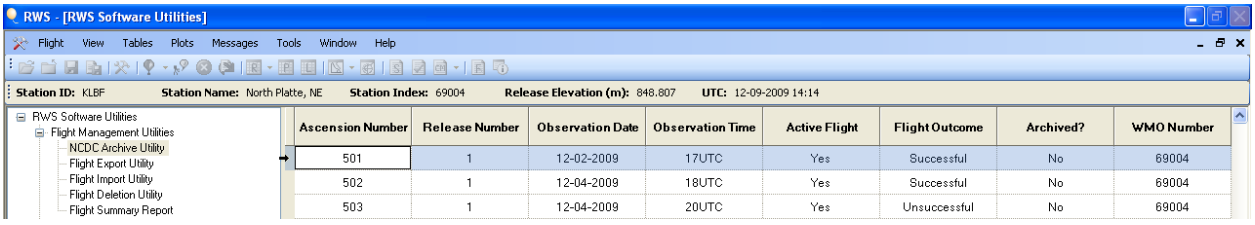



**Figure B-4: NCDC Archive Utility**

7. Click the **Build archives and send to NCDC** button after each flight is archived.
8. Continue to archive flights until all active flights are archived.
9. Select **Flight** and **Exit** to exit the RWS software. Closing the RWS software automatically backs up all archived flights to RWS external hard drive folder `E:\RWSBackup`.

### B.2.6 Export Archived Flights

Select only the last 3 months of archived flight that have not been previously exported or copied to a CD or other external media.

1. Double-click the **RWS-NET** desktop icon to start the RWS software. The *NOAA Warning* window will appear.
2. Click **OK** to dismiss the *NOAA Warning* window. The main *RWS* menu will appear.
3. Select the **Enter Offline Mode** icon to open the *RWS* window.
4. Select **Tools** and **Utilities** from the banner menu to open the *RWS Software Utilities* window.
5. Select **Flight Management Utilities** and **Flight Export Utility** from the *RWS Software Utilities* menu displayed on the left of the screen. The *RWS Software Utilities* window is updated to display a list of flight files (Figure B-5).

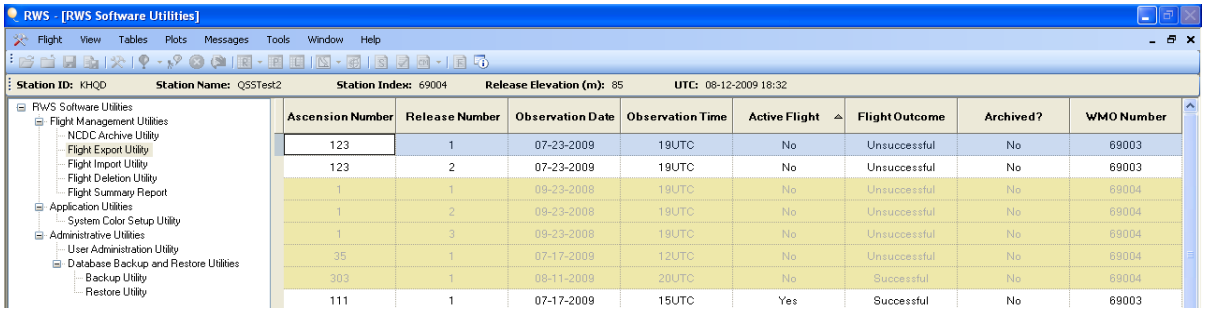



**Figure B-5: Select Ascension to Export**

6. Select the last 3 months of archived flights that have not previously been backed up. (To select a range of flights, press the **Shift** key and select the **first and last flights** of the range, or press the **Control** key and scroll the list.)
7. Click **Export** to display the *Browse for Folder* window (Figure B-6).

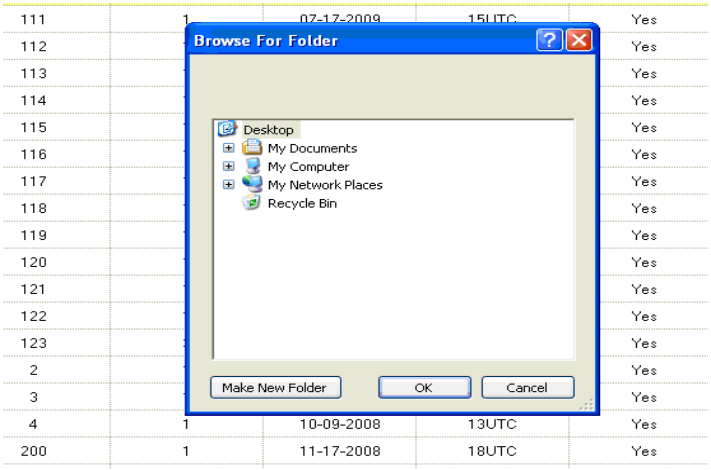



**Figure B-6: Browse to the Location for Export**

8. Browse to and select the desired external media or one or more CDs (do not use the `E:\drive`).

| | |
|---|---|
| **NOTE:** | If using CDs, copy the flight files to one or more CDs and label them RWS Flight CD, Backup #___, dated: _____. |

9. Click **OK** to export flights. All selected flights will be exported. The *RWS Offline Export Utility Results* window will display when the export is complete (Figure B-7).

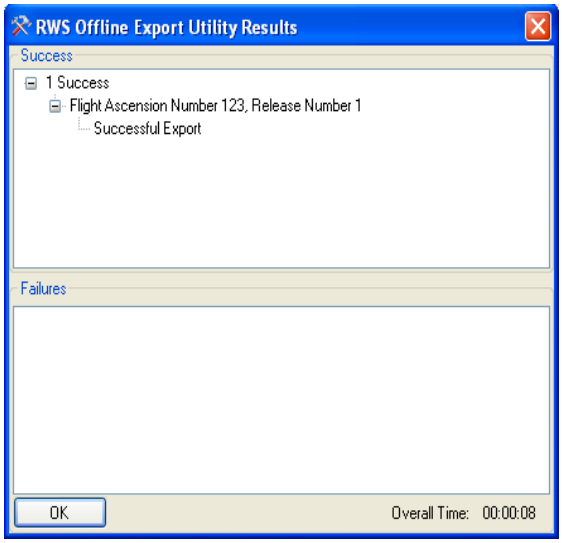



**Figure B-7: RWS Export Utility Results**

10. If any flights fail to export, contact the Direct Field Support staff at (703) 661-1268. The issue should be resolved before proceeding with the installation.
11. Click **OK** to close the *RWS Offline Export Utility Results* window.
12. Select **Flight** and **Close** to close the *RWS Software Utilities* window.
13. Select **Flight** and **Exit** to exit the RWS software.

### B.2.7 Delete Archived Flights from E:\ Drive

To avoid creating duplicate archived flight files for NCDC, all archived flight files in `E:\RWSBackup` must be deleted prior to installing the new RWS software.

| | |
|---|---|
| **NOTE:** | Be careful not to delete database files from `E:\Backup` when deleting flight files. |

1. In *Windows,* select **Computer** and **E Drive (E:)**.
2. Select **RWSBackup** folder.
3. Select all archived flights. (To select a range of flights, press the **Shift** key and select the **first and last flights** of the range, or press the **Control** key and scroll the list.)
4. Press the **Delete** key on the keyboard.
5. After all flights are deleted, click **Close**.

### B.3 RWS Software Version 2.3.1 Initial Installation

RWS Software V2.3.1 is approved for installation only at RRS sites that operate LMS-6 radiosondes and other RRS sites as directed by OPS22.

**CAUTION**

**Always load RWS software as a RWS Site Administrator. Never load RWS software as the Default Windows Administrator.**

#### B.3.1 Remove RWS Software Version 2.1 or Version 2.2 and OMS Software

Prior to installing RWS Software V2.3.1, RWS Software V2.1 or V2.2 must be removed:

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Select **Start**, **Control Panel**, and **Add or Remove Programs**.
3. Scroll to **RWS.NET** and click **Remove** (This may take up to 10 minutes with little or no noticeable activity).
4. Select **RRS Offline Maintenance** and click **Remove**.
5. A pop-up screen will display: `Are you sure you want to remove RRS Offline Maintenance?` Click **Yes**.
6. A pop-up screen will appear to confirm program removal. Select **Yes**.
7. A pop-up screen will display: `Uninstall Complete`. Click **Finish**.

#### B.3.2 Install RWS Software V2.3.1

**NOTE:** RRS station and LDAD Data must be backed up prior to removing the RWS Software V2.1 or V2.2 to avoid a loss of Site Data.

1. If necessary, log on to the RRS Workstation as **RWS Site Administrator**.

2. Insert the RWS Software CD (RWS.NET) into the RWS. The *RWS.NET - InstallShield Wizard* should automatically open (Figure B-8). If, after a few minutes, the program has not launched, browse the CD and double-click on **setup.exe**.

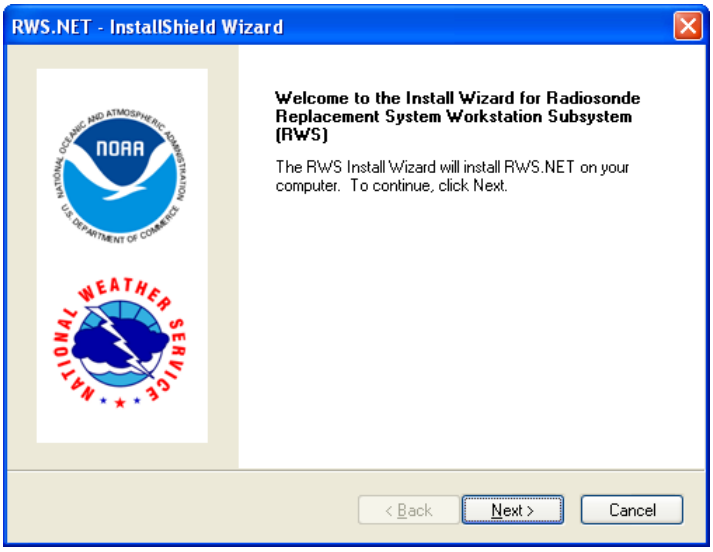



**Figure B-8: RWS.NET - InstallShield Wizard**

3. Click **Next** to display the *Station Information* window (Figure B-9).

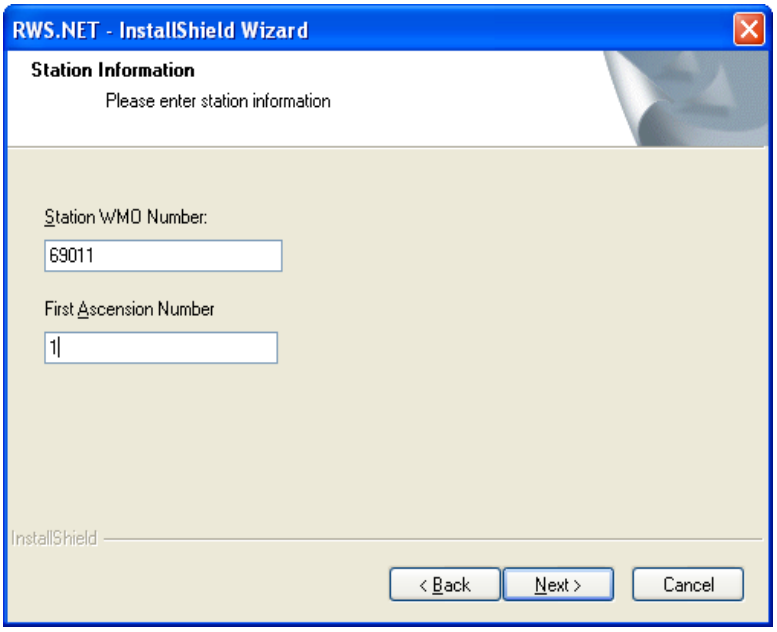



**Figure B-9: Station Information Window**

4. Enter the **Station WMO Number** and **First Ascension Number** recorded in Section B.2.

5. Click **Next** to display the *Ready to Install the Program* window (Figure B-10).

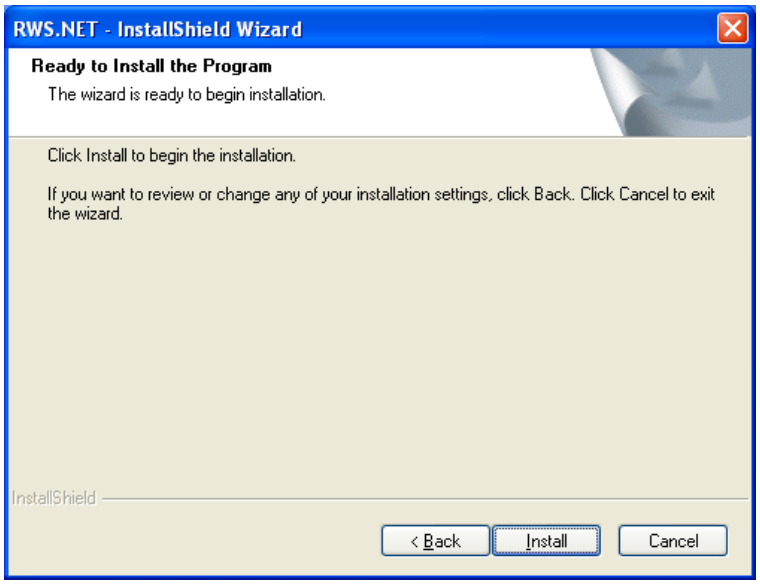



**Figure B-10: Ready to Install the Program Window**

6. Click **Install** and wait until the *InstallShield Wizard Complete* window indicates the process is complete (Figure B-11).

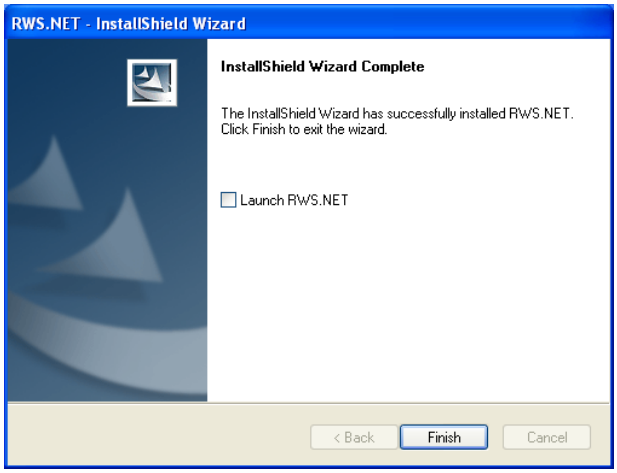



**Figure B-11: InstallShield Wizard Complete**

7. Uncheck **Launch RWS.NET** (Figure B-11), and then click **Finish** to exit the installation.
8. Remove the RWS Software CD and restart the RWS.

### B.3.3 Restore C:\LDAD

Review LDAD Data on the `C:\drive` to ensure it contains the PuTTY keys. If the PuTTY file is missing, skip to Section B.3.4. If not correct, copy the `E:\LDAD` folder to its proper location on the RRS Workstation:

1. Copy the contents of the `E:\LDAD` folder to `C:\LDAD`. The `C:\LDAD` folder contains the PuTTY keys required for message transmission.
2. Restart the RWS.

| | |
|---|---|
| **NOTE:** | Do not recreate PuTTY files. If these files are missing, contact the Direct Field Support staff at (703) 661-1268 for replacement. Recreating PuTTY files would require adding the new PuTTY files to all LDADs listed as primary, secondary, and tertiary transmission routes. |

### B.3.4 Enter Station Data

#### B.3.4.1 Verify Master Station Data

The Master Station Data is automatically entered when RWS.NET is first launched. Complete the following steps to enter Master Station Data, if Master Station Data needs to be manually loaded due to missing or inaccurate data. Use section B.3.4.3.

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Double-click on the **RWS.NET** desktop icon to start the RWS Software. The *NOAA Warning* window will appear (Figure B-12).

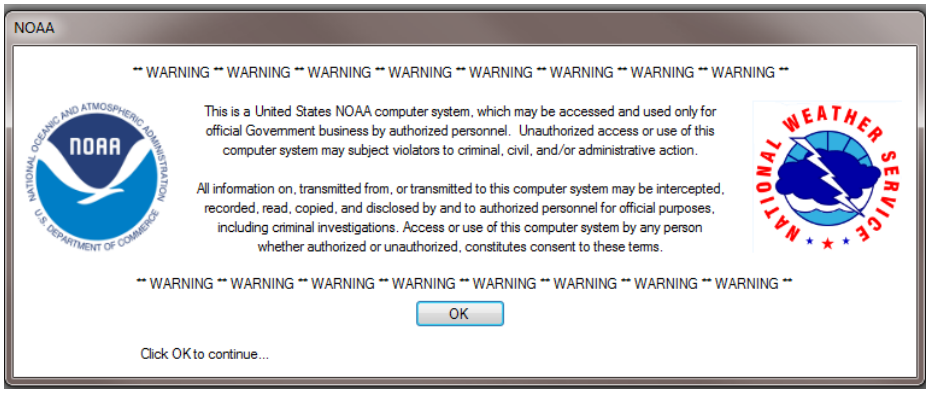



**Figure B-12: NOAA Warning Window**

3. Click **OK** to dismiss the *NOAA Warning* window. RWS will open with the *Master Station Data Initializing 2* window to indicate the Station WMO Number was used to initialize Master Station Data (Figure B-13).

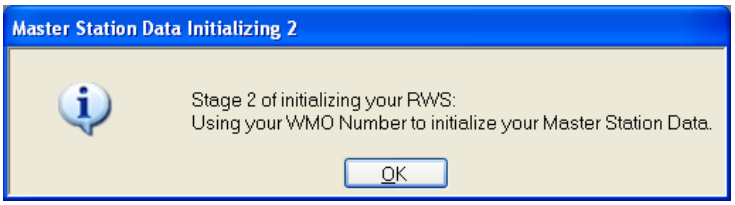



**Figure B-13: Master Station Data Initializing 2 Window**

4. Click **OK** to proceed. If initialization is successful, the *Master Station Data Initialized* window is displayed indicating `Master Station data updated.` (Figure B-14).


**Figure B-14: Master Station Data Initialized Window**

5. Click **OK** to proceed.

### B.3.4.2 Enter Local Station Data

If the RWS software indicates the Local Station Data has NOT been fully initialized, complete the following steps to enter Local Station Data:

1. If the *Local Station Data Not Initialized 1* window displays (Figure B-15), click **Yes** to open the *Station Data Display* (Figure B-16).

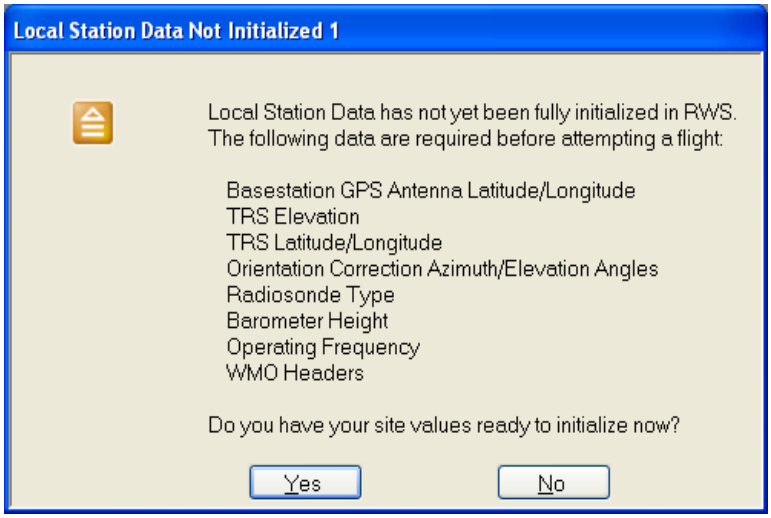



**Figure B-15: Local Station Data Not Initialized 1 Window**

| | |
|---|---|
| **NOTE:** | In addition to the Station Data saved in Section B.2, Station Data was collected during RRS deployment and cataloged in an RRS Site-specific Database on the NWSH Web site (https://ops13web.nws.noaa.gov/). Compare the locally saved Station (backup) Data to data from the OPS13 Web site. If there are discrepancies, call the Direct Field Support staff at (703) 661-1268. Once discrepancies are resolved, confirmed Station Data will be entered as a part of the RWS Software installation. |
| **NOTE:** | All RRS site Electronic Systems Analysts (ESAs) have automatic access to the RRS Site-specific Database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268. |
| **NOTE:** | Ensure the Radiosonde Type selected is **Sippican LMS6 (P sensor)** in the *Station Data Display* window after installing RWS Software V2.3.1. |

2. Enter the following values (recorded in Section B.2.2) for any field values missing from the *Station Data Display* (Figure B-16).

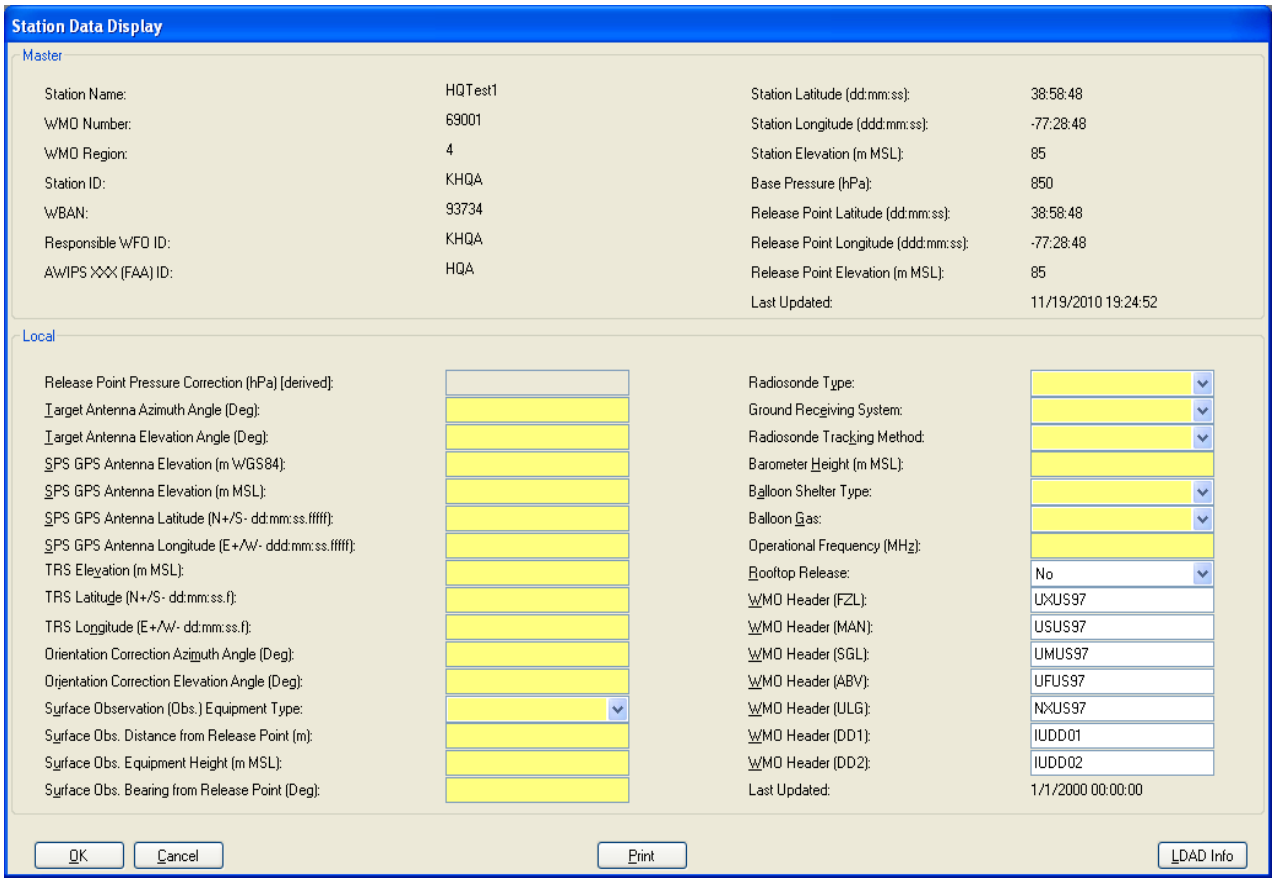



**Figure B-16: Station Data Display (Example Only)**

a. Release Point Pressure Correction (hPa): The Release Point Pressure Correction is derived and is not entered. The Release Point Pressure Correction is the pressure difference between the baseline point and the release point (i.e., balloon shelter). The value is calculated and cannot be entered. The value is negative if the release point is higher than the baseline point.

b. Target Antenna Azimuth Angle (Deg): Enter Azimuth angle of the target antenna in degrees.

c. Target Antenna Elevation Angle (Deg): Enter Elevation angle of the target antenna in degrees.

d. SPS GPS Elevation (m WGS84): Enter GPS antenna Elevation in Earth Ellipsoid Sphere in meters.

e. SPS GPS Elevation (m MSL): Enter GPS antenna Elevation above mean sea level in meters.

f. SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff): Enter GPS antenna latitude in the prescribed format.

**NOTE:** South latitudes and west longitudes are preceded by a negative sign.

g. SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff): Enter GPS antenna longitude in the prescribed format.
h. TRS Elevation (m MSL): Enter TRS Elevation above mean sea level in meters.
i. TRS Latitude (N+/S- dd:mm:ss.f): Enter TRS latitude in the prescribed format.
j. TRS Longitude (E+/W- dd:mm:ss.f): Enter TRS longitude in the prescribed format.
k. Orientation Correction Azimuth Angle (Deg): Not implemented, enter **0.00**.
l. Orientation Correction Elevation Angle (Deg): Not implemented, enter **0.00**.
m. Surface Observation (Obs.) Equipment Type: Select appropriate option.
n. Surface Obs. Distance from Release Point (m): Enter appropriate value in meters.
o. Surface Observation Equipment Height (m MSL): Enter appropriate value in meters.
p. Surface Obs. Bearing from Release Point (Deg): Enter appropriate value in degrees.
q. Radiosonde Type: Select appropriate option: **Sippican LMS6 (P sensor)**.
r. Ground Receiving System: Select appropriate option. (This is the SPS type.)
s. Radiosonde Tracking Method: Select **GPS**.
t. Barometer Height (m MSL): Enter station-specific value in meters.
u. Balloon Shelter Type: Select appropriate option.
v. Balloon Gas: Select appropriate option.
w. Operational Frequencies (MHz): Enter 1680 or the site-specific frequency in MHz used for first releases.
x. Rooftop Release: Select appropriate option.
y. WMO Header (FZL): Enter station specific value.
z. WMO Header (MAN): Enter station specific value.
aa. WMO Header (SGL): Enter station specific value.
bb. WMO Header (ABV): Enter station specific value.
cc. WMO Header (ULG): Enter station specific value.
dd. WMO Header (DD1): Not implemented, enter **IUDD01**.
ee. WMO Header (DD2): Not implemented, enter **IUDD02**.

3. Print the screen and have a second person verify all data entries.

#### B.3.4.3 Manually Enter Master Station Data (Top of Station Data Display Screen)

| | |
|---|---|
| **NOTE:** | Skip this section and go to Section B.3.4.4 unless the Master Station Data is not pre-loaded or is not accurate (i.e. the AWIPS SID may be XXX). Also use this procedure for RRS equipment siting changes. |

The Master Data portion of the *Master Station Edit* screen (not the same as WMO Station Data) is available on the OPS13 Web site.

1. Open the OPS13 Web site using noaa.gov e-mail username and password (https://ops13web.nws.noaa.gov/rrsupload/file_upload.file_upload_frame).
2. Select the **Site Specific Data** (for site X) from the pull-down list. Click **View Site Data**.
3. Print the Site Specific Data (for Site X) from the Web site.
4. Using the printed Site Specific Data from the OPS13 Web site, verify the Master Station Data.

5. If the OPS13 Web site is unavailable, use the previously saved and printed data from Section B.2.2.2 to verify the Master Station Data.
6. Enter the RRS Site Specific Data into the RWS Master Station Data as follows:

| | |
|---|---|
| **NOTE:** | The Station Data, including data to identify the Station, and the station and release position data will appear in text. There are edit fields for the new values. |

7. Close the RWS Software.
8. Browse to `C:\RWS\RWS` on the RRS Workstation.
9. Run **MasterEdit.exe**. The following dialog will appear (Figure B-17).
10. Enter the new Master Station Data for the station and release positions. The station values reflect the position of the PDB. The release values reflect the position of where the balloons are released.
11. The Master Station Data Version field is helpful to determine if the RWS has loaded and is using the new values. An incremented version will be pre-filled, and does not need to be changed for the installation.

| | |
|---|---|
| **NOTE:** | Do not change the Station Name, WMO Region, Station ID, WBAN, WFO ID or AWIPS (FAA) ID (this information is pre-loaded). Make changes only if a field is not pre-loaded (displays XXXs) or data is inaccurate. This information is critical for successful data transmission. |

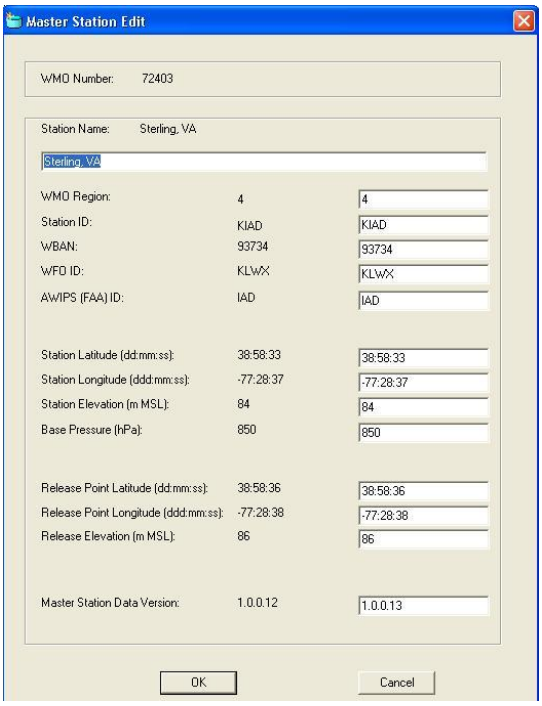



**Figure B-17: Master Station Edit (Example)**

12. When the new data is entered, click **OK**. If successful, the following message will appear (Figure B-18).


**Figure B-18: MasterEdit Update Successful Message**

13. Close MasterEdit.
14. To verify the updated Master Station Data was successful, restart the RWS, go to offline mode, and open the Station Data Display menu (from the View Station Info menu item).
15. Recheck the Master Station Data with Web site data (Figure B-19).

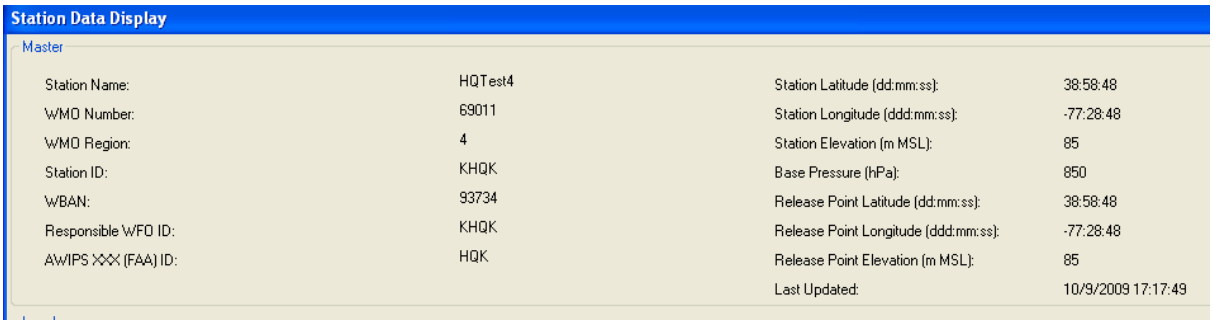



**Figure B-19: Master Station Data Display Menu (Example)**

16. If the RWS Station Data appears to be in error, contact the SFSC Helpline at (703) 661-1268 or (703) 661-1293.

### B.3.4.4 Enter LDAD Data

Complete the following steps to enter LDAD Data:

1. Click **LDAD Info** on the *Station Data Display* to open the *LDAD Data Display* (Figure B-20).

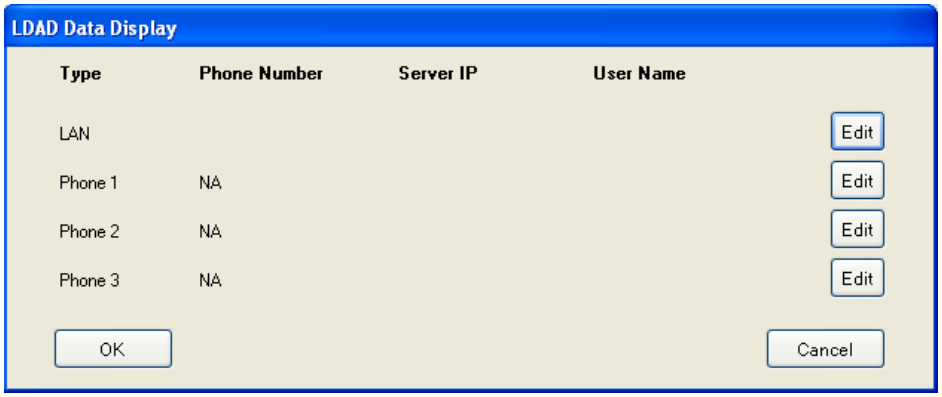



**Figure B-20: LDAD Data Display**

2. Click **Edit** for the LAN Type to open the *LDAD Data for LAN* window (Figure B-21).

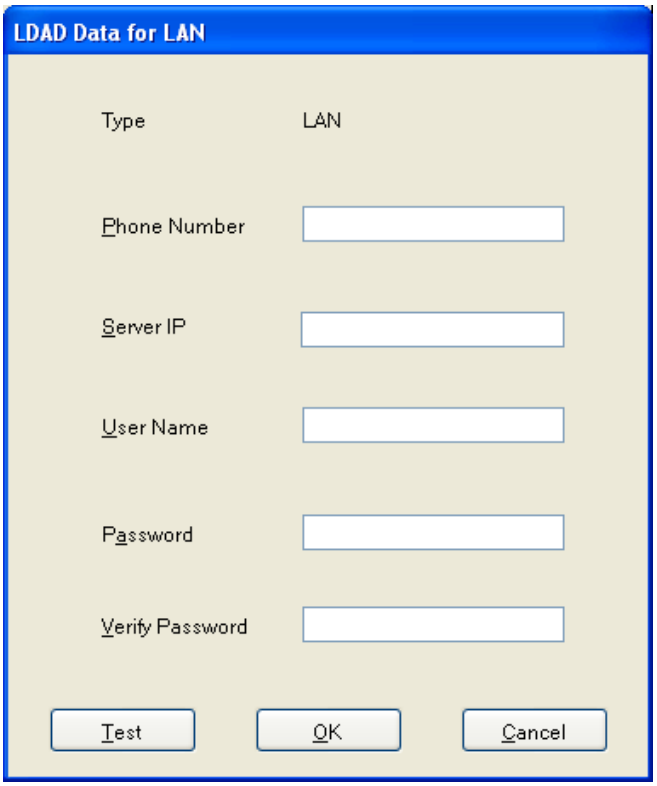



**Figure B-21: LDAD Data for LAN Window**

3. Complete the LDAD Data fields using the data recorded in Section B.2.4.

| **NOTE:** | The Phone Number field for the LAN Type should be blank. |
|---|---|

4. Click **OK** to accept the changes and close the *LDAD Data for LAN* window.
5. Edit the Phone 1, Phone 2, and Phone 3 Types.
6. Once all LDAD Data has been entered, click **OK** to close the *LDAD Data Display*.
7. Click **OK** to close the *Station Data Display*. The *Local Station Data Sufficient* window will display (Figure B-22).
8. Click **OK** to close the *Local Station Data Sufficient* window.

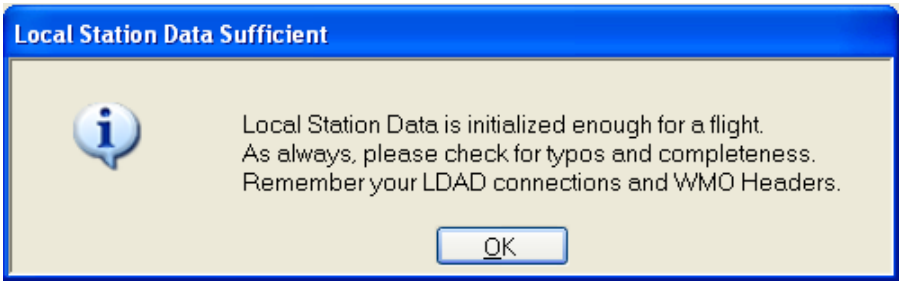



**Figure B-22: Local Station Data Sufficient Window**

### B.3.4.5 Restore Flight Data

In support of a new RWS software installation, flight files have been deleted from the `E:\RWSBackup` folder. If the following window appears (Figure B-23), select **Skip Import** and continue to Section A.3.5.

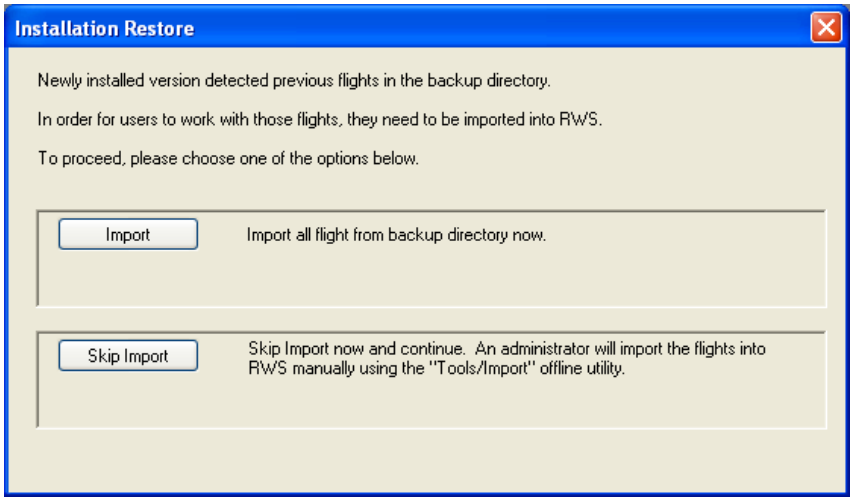



**Figure B-23: Installation Restore Window**

| | |
|---|---|
| **NOTE:** | To avoid creating duplicate archived flight files for NCDC, flight files are not to be imported into RWS. See RRS Workstation User Guide, Section 16 for additional information. |

### B.3.4.6 Optional Pre-Flight "No Data" Message Test

The following test is optional. Skip this Section and go to Section B.4 if the site is going to perform a live test flight. After ghosting and prior to a flight, perform an LDAD/communications test to quickly verify that all passwords are correct, PuTTY keys are not corrupted, all communication lines are working, and Flight Data can be transmitted. If necessary, perform the following procedure:

1. Log on to the RRS Workstation as **RWS Observer**.
2. Start the RWS Software Program.
3. Send a "NO Data" message to:
   - The LAN
   - Phone #1
   - Phone #2
   - Phone #3
4. Deselect all other choices except the one being tested.
5. View on an AWIPS terminal to ensure the messages were sent all the way through the system.

| | |
|---|---|
| **NOTE**: | When sending the "No Data" messages, select a different product for each test to differentiate between the messages, |

### B.3.5 Install OMS Software

At this time, install OMS Software V2.1 in accordance with Attachment C, before conducting an upper air flight.

## B.4 Verify Software Installation

### B.4.1 Conduct an Upper Air Sounding

Conduct a live flight following the initial installation of the RWS Software V2.3.1. See RRS Workstation User Guide for RWS Observers to conduct an upper air sounding (For a copy, go to: http://www.ua.nws.noaa.gov/RRS.htm, or use the RWS Help File function).

| | |
|---|---|
| **NOTE:** | Conducting a live flight is not necessary when only an RWS software maintenance release is being installed. |

### B.4.2 Capture the Flight

1. Double-click the **Capture Utility** shortcut to open the *RWS Capture Utility*.
2. Select the flight from the *RWS Capture Utility* pull-down menu (Figure B-24).

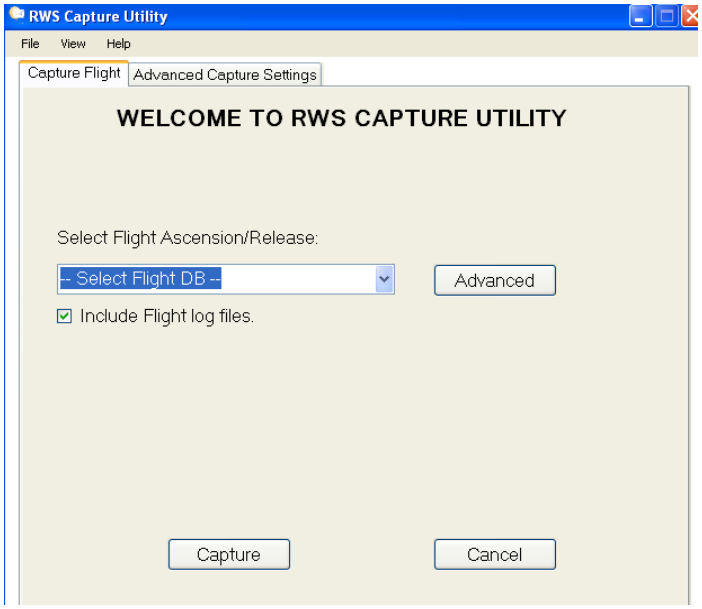



**Figure B-24: RWS Capture Utility**

3. Click the **Capture** button.
4. Click **OK** when the `Capture Successful` message will appear.

### B.4.3 Verify Message Transfer

#### B.4.3.1 Verify Message Accuracy in AWIPS

1. Verify the receipt of the coded messages by logging on to an AWIPS terminal or by viewing the coded messages at http://www.weather.gov/data/.

| | |
|---|---|
| **NOTE:** | To verify receipt of Pacific Region coded messages, log on to: http://www.prh.noaa.gov/data/. |

2. Verify the accuracy of the coded messages.

#### B.4.3.2 Verify Messages to NCDC

Verify the successful reception of archived data to the NCDC ftp site. Visit: http://www1.ncdc.noaa.gov/pub/data/ua/RRS/YYYY (where YYYY is the current year). Once at the Web site, find the log file representing the site by identifying the Station ID and the year and month the data was transmitted. For example, `klwx_0801_log.txt` would contain the upload history for LWX for January of 2008.

### B.5 Optimize Windows Desktop

When time permits, optimize the *Windows* Desktop for best performance. Refer to Attachment D to perform this function.

# ATTACHMENT C – Offline Maintenance Suite Installation Procedures, Version 2.1

## C.1 Overview

This Attachment describes the installation of Offline Maintenance Suite (OMS) Version (V) 2.1.

OMS Software V2.1 is contained on the same CD as RWS Software V2.3.1. The software is only available on CD directly from the Observing Systems Branch (OPS22, 301-713-2093 x107).

The RRS Workstation (RWS) is connected to a number of devices (SPS, TRS, RSOIS, PDB), that provide live data feeds. These devices can be tested offline using various programs collectively called the OMS.

The OMS is accessed through a desktop RRS Offline Menu icon that permits the user to select the port and device to test. One of the programs is Offline BIT (OBIT), which is used to test the TRS and UPS. Other non-OBIT programs test the SPS, RSOIS, PDB, and AWIPS/LDAD.

OBIT is both a test program and an RWS Software Simulator. OBIT is a simple Graphical User Interface (GUI) built on top of the Radiosonde Protocol eXecutive (RPX) library program. OBIT is essentially a *Windows* user interface display and logger connected to the various RRS Workstation device data streams (i.e., their serial ports or the equivalent ports of an external data pump). OBIT displays device status and enables running device Built-in-Tests (BIT) for hardware status and diagnostics.

| | |
|---|---|
| **NOTE:** | Even though the TRS hardware is unchanged, the OBIT Program for RWS V2.3.1 has been updated in OMS V2.1 (from 1.5.0 to 1.5.1) to stop running the TRS MCU Azimuth and Elevation drive tests – to avoid possible hardware damage. |

## C.2 OMS Related Documents

- RRS Offline Maintenance Suite and OBIT Overview
- RRS Workstation User Guide for RWS V2.2 and V2.3.1
- NWS EHB 9-720: RRS Workstation Operations and Maintenance Manual

## C.3 Install RWS OMS Version 2.1 Software under Windows XP

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Insert the RWS Software CD (`RWS.Net`) into the RWS.
3. The *RWS CD Auto Install* option will appear. Click **Cancel** (Exit Setup screen).
4. Double-click on **My Computer**.
5. Right-click on **CD drive (`D:`)**.
6. Select **Explore**. The CD File Directory will appear (Figure C-1).

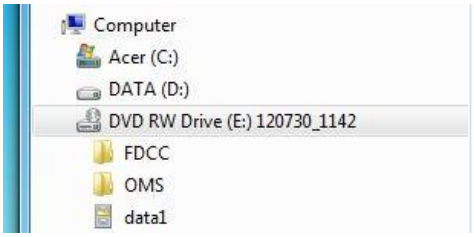



**Figure C-1**: **CD Drive File Directory**

7. Double-click on the **OMS** folder (Figure C-2).
8. Double-click on the **OMSSetup** file.

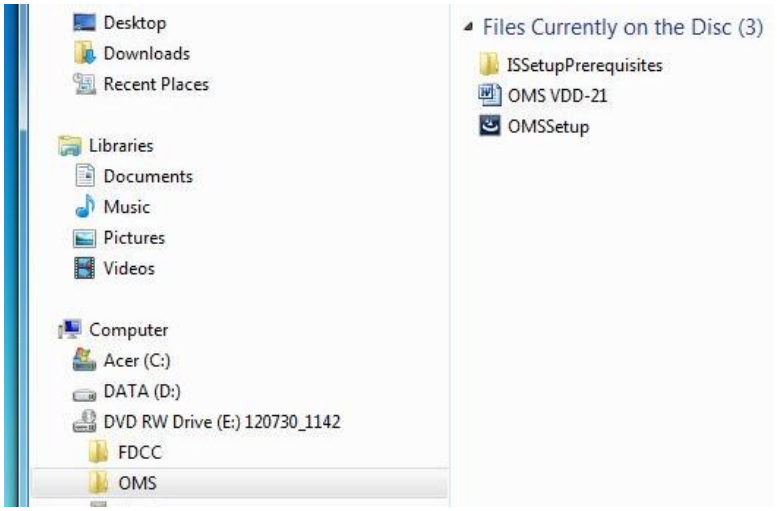



**Figure C-2**: **OMS Folder and Setup Screen**

9. The *InstallShield Wizard* display will appear. (The program will display and extract both Vaisala SPS and Sippican SPS Maintenance Programs, but will install Vaisala first). Click **Install** (Figure C-3).

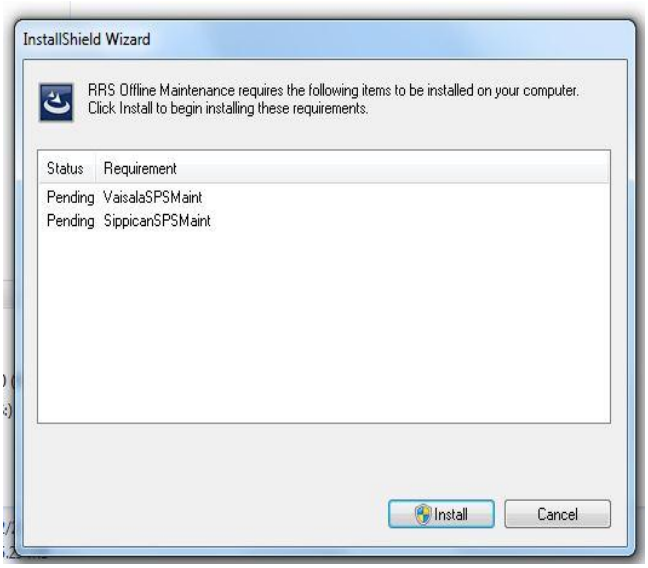



**Figure C-3**: ***InstallShield Wizard* with Both Vaisala and Sippican Maintenance Displayed**

10. The SPS Maintenance *InstallShield Wizard* screen will appear to begin the Vaisala installation. Click **NEXT**.

11. A Vaisala configuration setup screen will appear. Select **Serial Channel** connection type, and select: **COM Port**. Enter **9**. Click **Next** (Figure C-4 ).

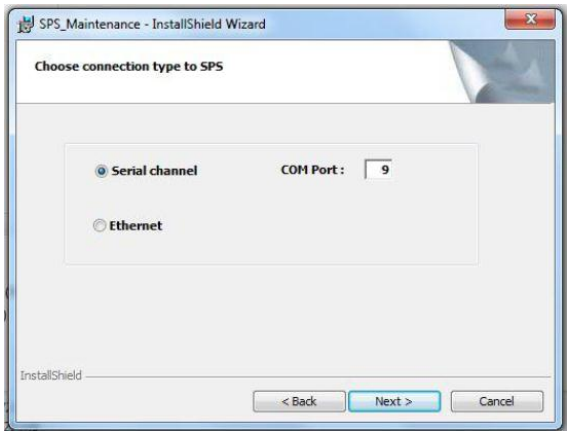



**Figure C-4**: **Vaisala Configuration Setup**

12. The *Ready to Install* screen (for Vaisala) will appear (Figure C-5). Click **Install**...

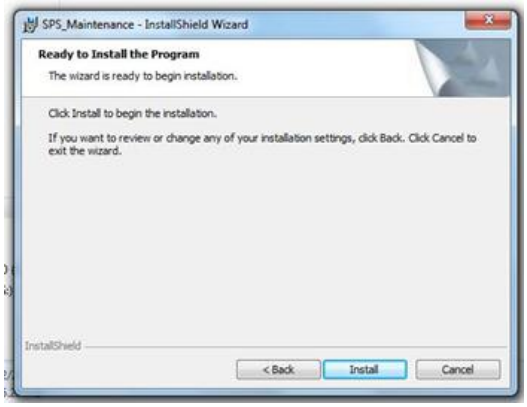



**Figure C-5**: **Vaisala SPS Maintenance Install**

13. The *InstallShield Wizard Completed* screen will appear. Click **Finish**. This will end the Vaisala Installation (Figure C-6).

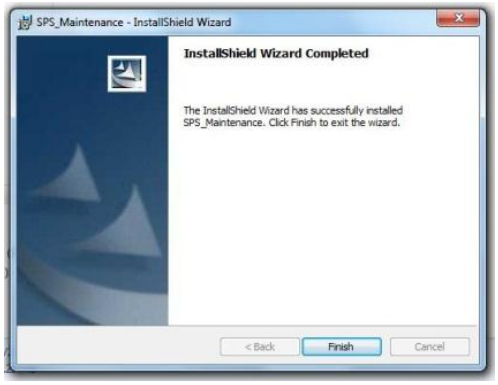



**Figure C-6**: **Vaisala SPS Maintenance Install Complete**

14. The *SPSMaint Setup* screen will appear for the Sippican installation. Click **OK** (Figure C-7).

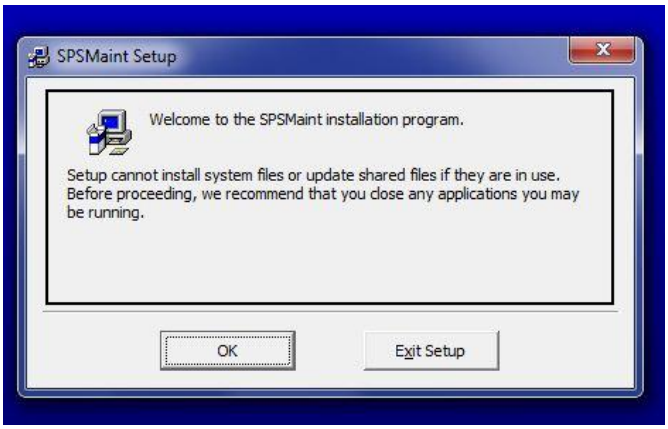



**Figure C-7**: **Sippican SPS Maintenance Install**

15. The *Begin the installation* screen will appear (Figure C-8). Click on the **computer icon** button. Select **Program Group**. Do not change the default settings

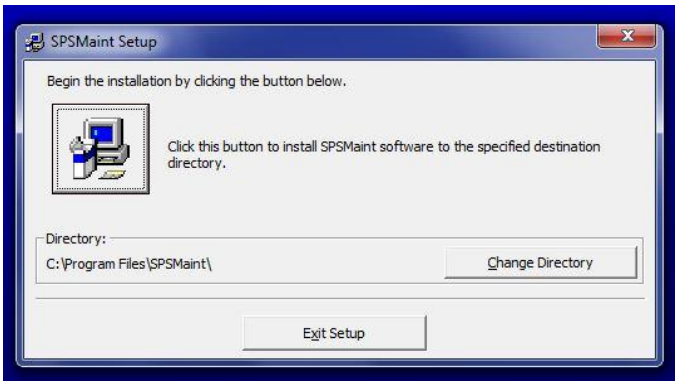



**Figure C-8**: **Sippican Install**

16. Click **Continue**. The Sippican *SPSMaint Setup was completed successfully* screen will appear (Figure C-9).


**Figure C-9**: **Sippican SPS Install Completed**

17. Click **OK**. Setup configuration is complete for starting OMS install.
18. The *InstallShield Wizard* for OMS will appear. Click **Next**.

19. The *InstallShield Wizard* will appear for OMS. Click **Install** (Figure C-10).

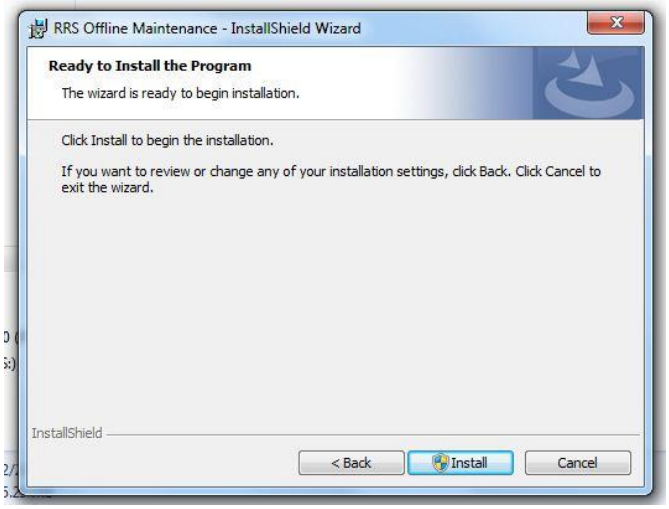



**Figure C-10**: **OMS Installation**

20. The *InstallShield Wizard Completed* screen will appear.
21. Click **Finish**. OMS installation is complete (Figure C-11).


**Figure C-11**: **OMS Installation Completed**

22. Close all screens. Remove the RWS Software CD from the CD-RW drive.

### C.4 Confirm TRS Station Data

After OMS software installation, perform the following steps to confirm the TRS Station Data matches the specific data stored in TRS location files:

**NOTE**: The TRS must be initialized.

1. Double-click on the **RRS Offline Maintenance** icon to start the OMS.
2. Set up the COM ports by entering the Serial COM port numbers (shown in Table C-1, COM Ports) into the *RRS Offline Maintenance Menu*.

**Table C-1: Default Port Settings**

| COM PORTS | |
|---|---|
| **OMS MAINTENANCE** | **SERIAL COM PORTS** |
| SPS Maint | 9 |
| RSOIS | 6 |
| PDB | 7 |
| TRS | 1 |
| UPS | 8 |

3. Select **UPS Maintenance** from the *OMS* menu.
4. Power on the TRS by selecting the **Power On** option. Then close the *UPS Maintenance* window.
5. *OBIT: OFFLINE BITS* screen will appear. Select **YES**.
6. Wait for Status to Display: 08 = ONLINE.
7. Select the **TRS Maintenance** option.
8. Click the **Mode** menu and select the **Terminate** option.
9. Click the **Setup** menu and select the **Station Data** option.

10. Load the TRS Station Data (if Station Data menu fields are not correct) by entering the site's station latitude and longitude (to one decimal or second) as well as the applicable TRS Azimuth and Elevation values. See Figure C-12 for an example of TRS Station Data. Use Station Data recorded in Section A.2.2, or Section B.2.2.

| | |
|---|---|
| **NOTE:** | A complete set of TRS Station Data is available for reinstallation from the Configuration Management Database at: https://ops13web.nws.noaa.gov/. |
| **NOTE:** | All RRS Site Electronic Systems Analysts (ESAs) have automatic access to the RRS Site-specific Database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268. |

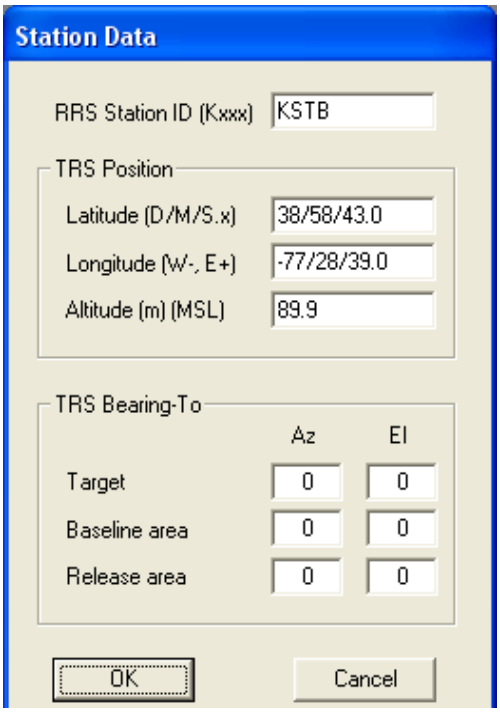



**Figure C-12: Station Data Window (Example Only)**

11. Click **OK**.
12. Close the OBIT. The *Offline Maintenance* screen will return.
13. Click **Exit**.
14. Close the **OMS**.

# ATTACHMENT D – Optimizing the Windows Desktop for RRS Workstation

## D.1 Windows Desktop Setup for RWS

RRS Workstations (RWS) usually default to the *Windows Classic* theme when added to a domain. The *Windows Classic* theme can cause unexpected behavior when running the RWS Software. Execute the following steps for best RWS Software performance.

## D.2 Set the Visual Effects Option

This section must be completed by an RWS Site Administrator. Complete the following steps to set Visual Effects to Adjust for best appearance.

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Click **Start**.
3. Right-click on **My Computer** to display a drop-down menu, and then click on **Properties** to open the *System Properties* window.
4. Click the **Advanced** tab, and then click **Performance|Settings** to open the *Performance Options* window.
5. Click the **Visual Effects** tab, and then select the **Adjust for best appearance** option.
6. Click **OK** to accept the change and close the *Performance Options* window.
7. Click **OK** to close the *System Properties* window.
8. Log off of the RRS Workstation.

## D.3 Set the Display Options

This section should be completed by all RWS users. Complete the following steps to set Visual Effects to Adjust for best appearance.

1. Log on to the RRS Workstation as **RWS User**.
2. Right-click on the **Windows Desktop** to display a drop-down menu, and then click on *Properties* to open the *Display* Prop*erties* window.
3. Click the **Themes** tab, and then set the Theme value to **Windows XP**.
4. Click the **Appearance** tab, and set the Windows and Buttons value to *Windows XP* style.

5. Click the **Effects** button to open the *Effects* window (Figure D-1).
6. Select all options except `Use large icons`, and then select the **Fade effect** and **Standard** option from the drop-down list.

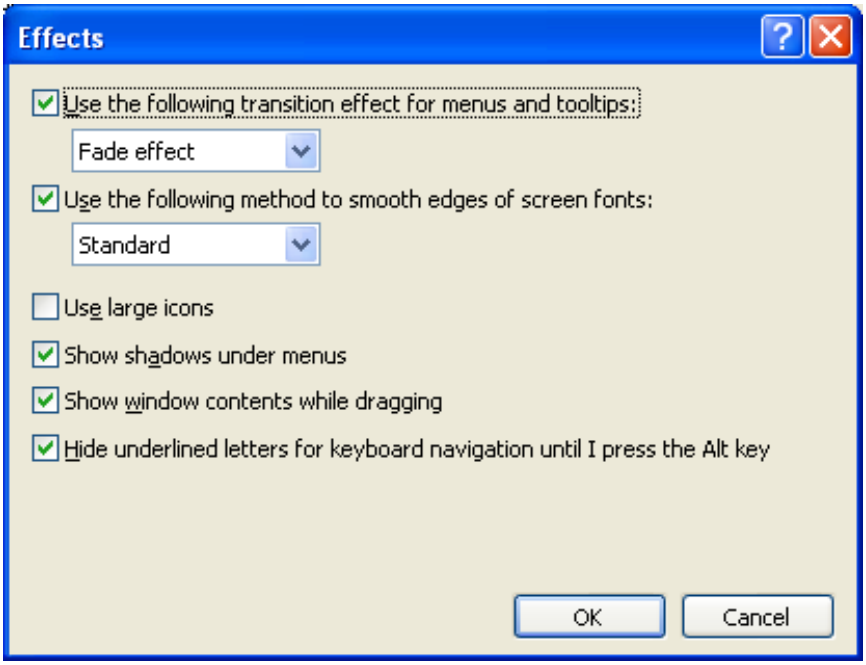
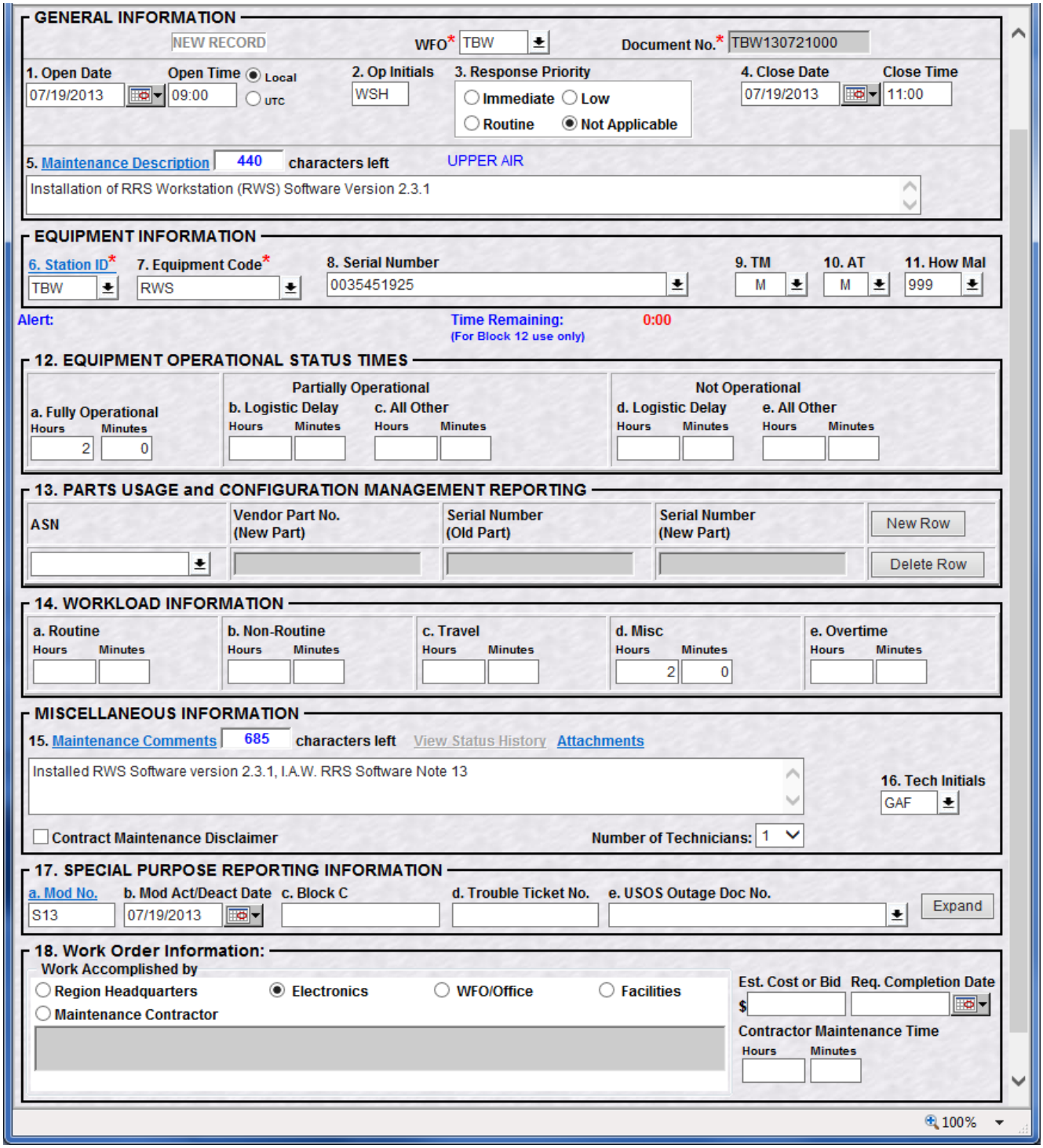



**Figure D-1: Effects Window**

7. Click **OK** to close the *Effects* window.
8. Click **OK** to close the *Display Properties* window.
9. Log off of the RRS Workstation.

\

# ATTACHMENT E – Sample EMRS Report



GENERAL INFORMATION

NEW RECORD WFO* TBW Document No.* TBW130721000

1. Open Date 07/19/2013 Open Time 09:00 (Local / UTC) 2. Op Initials WSH 3. Response Priority (Immediate / Low / Routine / Not Applicable) 4. Close Date 07/19/2013 Close Time 11:00

5. Maintenance Description 440 characters left UPPER AIR

Installation of RRS Workstation (RWS) Software Version 2.3.1

EQUIPMENT INFORMATION

6. Station ID* TBW 7. Equipment Code* RWS 8. Serial Number 0035451925 9. TM M 10. AT M 11. How Mal 999

Alert: Time Remaining: 0:00 (For Block 12 use only)

12. EQUIPMENT OPERATIONAL STATUS TIMES

| a. Fully Operational Hours | a. Fully Operational Minutes | Partially Operational b. Logistic Delay Hours | b. Logistic Delay Minutes | c. All Other Hours | c. All Other Minutes | Not Operational d. Logistic Delay Hours | d. Logistic Delay Minutes | e. All Other Hours | e. All Other Minutes |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 0 | | | | | | | | |

13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING

| ASN | Vendor Part No. (New Part) | Serial Number (Old Part) | Serial Number (New Part) | New Row / Delete Row |
|---|---|---|---|---|
| | | | | |

14. WORKLOAD INFORMATION

| a. Routine Hours | a. Routine Minutes | b. Non-Routine Hours | b. Non-Routine Minutes | c. Travel Hours | c. Travel Minutes | d. Misc Hours | d. Misc Minutes | e. Overtime Hours | e. Overtime Minutes |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2 | 0 | | |

MISCELLANEOUS INFORMATION

15. Maintenance Comments 685 characters left View Status History Attachments

Installed RWS Software version 2.3.1, I.A.W. RRS Software Note 13

16. Tech Initials GAF

Contract Maintenance Disclaimer Number of Technicians: 1

17. SPECIAL PURPOSE REPORTING INFORMATION

| a. Mod No. | b. Mod Act/Deact Date | c. Block C | d. Trouble Ticket No. | e. USOS Outage Doc No. |
|---|---|---|---|---|
| S13 | 07/19/2013 | | | |

Expand

18. Work Order Information:

Work Accomplished by: (Region Headquarters / Electronics / WFO/Office / Facilities / Maintenance Contractor)

Est. Cost or Bid $ Req. Completion Date

Contractor Maintenance Time Hours Minutes

100%